The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 334.—Vol. XII.] LONDON: SATURDAY, JANUARY 15, 1842. [Price 6d.

VERY SUPERIOR EIGHTY-INCH STEAM-ENGINE, and other VALUABLE MINING MATERIALS, at WHEAL JULIA MINE, in the parish of Crowan, Cornwall.—TO BE SOLD, BY AUCTION, at the aforesaid mine, by Mr. Penbertny, on Tuesday, the 18th of January inst., and following day, at Ten o'clock in the forenoon, a splendid 80-inch engine, 11 feet stroke in cylinder, and 9 feet ditto in shaft (Boulton and Watt, erected by Mr. James Sims, 1836), with 3 boilers, and 1 warmer to ditto, steam and feed pipes, &c., &c.; a 12-inch steam-whim, with fly-wheel, cast-iron cage, and boiler complete; a 40-feet water-wheel, 2 ft. 6 in. breast, to which is attached a whim, with cast-iron cage, &c., and a crushing machine complete; capstan, with oak axle and cast-iron sockets; shears, 30½ fathoms high, with sheaves and stays; 160 fathoms of 16-inch capstan rope; large balance box, with gudgeons, saddles, straps, &c.; 2 horse-whims, with shaft tackles; stamps' axle, 9 feet long, 4 feet diameter, complete; 2 frames for 8 stampheads, and 4 wrought-iron lifters and heads; a winch; 2 treble blocks; 9 cast-iron horses for boilers, fire doors, dampers, bars, &c.; a miners' dry, comprising sundry cast and wrought-iron pipes, a large bell and stand, 15½ fathoms flat whim-rope, and various other rope.

35 9-feet 16-inch pumps	1 7-feet 9-inch windbore
4 6-feet ditto ditto	1 9-feet 7½ inch ditto
32 9-feet 15-inch ditto	1 16-inch H and top door-piece
1 4 feet ditto ditto	1 18-inch door and matching-piece
1 9 feet 15 inch matching piece	1 6-feet 15-inch door-piece
7 9-feet 7-inch pumps	1 14-inch knee and top door-piece
1 9-feet 6-inch pump	1 6½-feet 12-inch door-piece
1 12½-feet 16-inch working barrel	1 6½ feet 11-inch top door-piece
1 12-feet 15-inch ditto	1 6-feet 8-inch door-piece
1 8-feet 12 inch ditto	1 18-inch plunger case, with stuffing-box and gland
1 6½ feet 18 inch windbore	1 16-inch plunger pole and case, with stuffing-box and gland
1 9-feet 16 inch ditto	1 16-inch plunger pole
1 6-feet ditto ditto	1 24-inch ditto
2 9-feet 15-inch ditto	1 15-inch plunger pole, 12 feet long
1 9-feet 11-inch ditto	
1 9-feet 10-inch ditto	

55 pair 20-feet strapping-plates; 6 pair 15-feet ditto, with rod-bolts, bars, &c.; 160 fathom ¾ whim chain (nearly new); about 2 tons ditto of various sizes; 60 sheaves for round and flat rope; 8 shaft pullies; 2 axles; about 5 tons rod-iron; 1 ton railway ditto, 20 tons old wrought-iron, and 20 ditto of cast; 40 staples and glands, with 2-inch faggotted tops, and a quantity of ditto, of various sizes; side and other plates; brass boxes; iron prongs, with faggotted valves; swords; caps; pin plates; flange bolts and bars; spanners; whim and winze kibbles; bell wire; 3 set chain bugies; 24 fathoms 14-inch oak rods; 7 fathoms 9-inch ditto; 50 fathoms 12-inch deal ditto; 30 fathoms 6-inch ditto; 150 fathoms large box launders, and a quantity of smaller ditto; 4 oak bearers, 80 feet by 16-inch square; 18 feet of birch ditto, two large underground cisterns with oak bottoms; 200 fathoms iron and wood stave ladders; barrows, hutches, sieves, chests, carpenter's bench, upwards of 200 lots of useful old debenture timber, oak, birch, &c.—In the smiths' shop, 1 47-inch, and 1 36-inch smith's bellows; 1 anvil; iron horse; mandril; kibble mould; punching-engine, screw stocks; a quantity of smiths', miners', and screwing tools; 6 brick forges; screwing box, &c., &c.—several slate, tile, and thatched roofs and sheds; together with the account-house furniture; also, two good cart horses and harness, a waggon, a cart, and sundry racks, mangers, &c.

The materials are in excellent condition, and may be seen, and particulars known, by applying to Mr. Rosewarne, at Godolphin Mine.

Helstone, January 5. 1

VALUABLE COAL MINES AND IRONSTONE, at Marehay, near Ripley, in Derbyshire.—TO BE SOLD, BY AUCTION, by Messrs Brearey and Eyre, at the Royal Hotel, in Derby, on Thursday, the 27th January instant, at Four o'clock in the afternoon, the COAL, IRONSTONE, and other MINERALS, under 130 acres of land, at Marehay, near Ripley, and the fixed and tonnage rents payable by the lessee. The mines consist of the most valuable seams of coal in the neighbourhood, being the Main Soft Coal, the Bottom Hard or Denby Coal, the Eli Coal, and the Furnace Coal, as also valuable mines of ironstone and pot clay. The three first-mentioned beds of coal are leased for a long term at a fixed annual rent of £500, and a tonnage rent upon the quantity gotten beyond what the fixed annual rent will cover. The superior quality of the coal has been proved by six years' working, and the position of this colliery (the other hard coal in the neighbourhood being nearly exhausted) insures the command of the market, and an extensive sale at good prices. The colliery is seven miles from Derby, and has a wharf adjoining the Derby and Alfreton turnpike-road, near Ripley, and a railway to the Derby Canal.

For further particulars applications may be made to Mr. Barber, solicitor, Derby; or to Mr. Woodhouse, civil engineer, Overseal, Ashby-de-la Zouch.

Derby, January 1. 2

VALUABLE FREEHOLD ESTATES AND COAL MINES, at Denby and Marehay, within eight miles of the town of Derby.—TO BE SOLD, BY AUCTION, by Messrs. Brearey and Eyre, at the Royal Hotel, in Derby, on Thursday, the 27th January inst., at Four o'clock in the afternoon:—

Lot 1. An excellent HOUSE, at Denby, with extensive and well-arranged farming buildings, several cottages for labourers, and a compact and useful farm, in a high state of cultivation, occupied by Mr. Samuel Woodley, and containing 155 acres.

Lot 2. Another FARM, in Denby, adjoining to lot one, occupied by Mr. Samuel White, and containing 55 acres.

Lot 3. The COAL, IRONSTONE, and other MINERALS, under 130 acres of land, at Marehay, near Ripley, and the fixed and tonnage rents payable by the lessee.

Lot 4. An excellent FARM, at Marehay (part of the 130 acres mentioned in lot three), in the occupation of Mr. John Woodley, lying in a ring fence, and containing 100 acres.

Lot 5. THREE CLOSES of rich and very useful LAND, at Ripley, with a cottage and garden, also occupied by Mr. John Woodley, and containing 10a. 1r. 29p.

Lot 6. A small PIECE of LAND, at Heanor, fronting the turnpike-road from Heanor to Loscoe, containing 1r. 9p., now occupied by James Nelson.

The tenants will show the lands in their occupation, and further particulars may be obtained on application to Mr Barber, solicitor, Derby; to Mr. John Brown, land agent, Derby; or to the auctioneers.

Derby, January 1. 3

TO BE SOLD, BY PRIVATE CONTRACT—viz., One 100th share in United Mines; One 120th ditto in East Pool; One 120th ditto in Treworvas; One 90th ditto in ditto; One 120th ditto in South Basset; One 240th ditto in Treburlan.—Apply to Nicholas Trevena, Mine Broker and Auctioneer, Redruth, who is ready to negotiate the purchase or sale of mine property generally, on fair terms.—Dated January 12. 4

CONDENSING STEAM-ENGINE FOR SALE.—A 20-horse power, on Boulton and Watt's principle, in first-rate condition, with boiler, &c., complete, may be seen daily in full operation.—Apply to Mr. W. G. Wills, Stangate Sawing and Planing Mills, Palace-road, Lambeth. 5

WANTED to PURCHASE, a SINGLE-STROKE PUMPING ENGINE, from 40 to 50-inch cylinder, with boiler, &c., complete.—Apply to Mr. P. N. Johnson, 78, Harley-street. 6

TO ENGINEERS, MILLWRIGHTS, FOUNDERS, SMITHS, AND OTHERS.

TO BE DISPOSED OF, an old-established ENGINEER'S, MILLWRIGHT'S, and FOUNDER'S CONCERN the present proprietor retiring from the manufacturing department, situated in London. The premises and plant are arranged for a most extensive business, and have been erected during the last twenty-five years, at a considerable cost; but, from the above cause, will be disposed of upon extremely favourable terms. The premises will be let on lease, and the machinery and tools disposed of at a valuation.—Apply, for particulars, to John Evans, Esq., 16, Lincoln's Inn fields. 7

TO ENGINEERS, FOUNDERS, MACHINE MAKERS, STEAM-SHIP BUILDERS, AND OTHERS.

FOR SALE, an extensive and valuable MANUFACTORY, for the construction of STEAM-ENGINES, BOILERS, GENERAL MACHINERY, CHAIN CABLES, ANCHORS, FOUNDRY GOODS, FORGED GOODS, and GENERAL BLACKSMITH WORK, well-known as the POCRAISE IRON-WORKS, Aberdeen.—These works occupy nearly four acres of freehold ground, at a very moderate feu-duty or ground-rent, and are situated at Pocraise, in the populous city of Aberdeen, within 200 yards of the Harbour quay. The engines, boilers, and machinery of several of the large class of steam-ships have been wholly constructed and fitted up at these works, which afford unusual facilities to parties engaging in that branch of business, and such as exist in few other establishments in the United Kingdom. The foreign and coasting trade of the port of Aberdeen is very extensive, and has rapidly increased for several years past, whilst the steam trade to London, Hull, Leith, Inverness, Orkney, Shetland, &c., is carried on to a very considerable extent.

Immediately adjoining the ironworks, and belonging to the same proprietors, is an extensive ROPE, SAIL, and TWINE WORK, which will also be DISPOSED OF, either with or without the ironwork, as may be agreed upon. To a party desirous of engaging in the building and equipping of steam or sailing vessels, the construction and repairing of steam-engines, sugar-mills, and general machinery, these works, from their local situations and peculiar facilities within themselves, will be found particularly well adapted. The whole of the buildings are substantial, commodious, and suitable for the respective trades carried on within them. The machinery is of the first class, and in excellent order, the whole having been erected at considerable expense, by the committee, the whole will continue to be carried on in all its branches, and orders executed as usual.

A plan and specification of the premises have been printed, which may be had, and further particulars and further information upon the subject, be had upon application to Messrs. Johnston and Farquhar, solicitors, London; John Jopp, Esq., W.S., Edinburgh; or Messrs. Jopp and Hood, advocates, Aberdeen, in whose hands the title-deeds of the property are. 8

POSTPONEMENT OF THE SALE OF TIN.—The Governor and Company of Copper Miners in England hereby give notice, that their quarterly sale of 1000 tons of British tin, advertised to be held at their office, 57½, Old Broad-street, is POSTPONED to Thursday, the 27th January inst., at Twelve o'clock precisely. 9

THE MINERS' COMPANY.—The court of assistants of the Governor and Company of Copper Miners in England hereby give notice, that they will SELL, on Thursday, the 27th of January now next ensuing, at their offices, in Old Broad-street, ONE THOUSAND TONS of BRITISH GRAIN, REFINED, and COMMON TIN, in blocks, ingots, and bars, in barrels, in lots of not less than two tons, deliverable in London, Liverpool, Newport, and Bristol, or from their smelting works in Cornwall. Catalogues will be issued in due time, containing particulars and conditions of sale, which will be delivered either at this office, or by the company's brokers, Messrs. Short and Mahony, No. 1, Newman's-court, Cornhill.

Office of the Governor and Company of Copper Miners in England, Old Broad-street, London, Dec. 28. 10

BRITISH IRON COMPANY.—Notice is hereby given, that the FOURTH INSTALMENT of the principal of the PROMISSORY NOTES issued by the British Iron Company in the year 1838, and the SEVENTH HALF-YEAR'S INTEREST upon them, will be paid at the office of the company, No. 3, New Broad-street, on Thursday, the 20th inst., and on every subsequent Monday, Wednesday, and Friday, between the hours of Twelve and Four o'clock. The notes, with a list of them, signed by the holders, must be left for examination one clear day previously to application for payment. 11

CONSOLIDATED COPPER MINES OF COBRE ASSOCIATION.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the proprietors of this association will be held, in conformity with the Deed of Settlement, at the office of the company, 26, Austinfriars, on Tuesday, the 18th day of January next, at One o'clock precisely. On that day two directors—namely, the Right Honourable the Lord Mayor, John Fiott, Esq., and George Whitmore, Esq.; and one auditor, Alexander Druce, Esq., will go out of office by rotation, agreeably to the Deed of Settlement, but are immediately re-eligible, and are candidates for re-election. It is necessary that parties intending to offer themselves as candidates for the direction and auditorship should leave notice of such their intention with the secretary, at the office of the company, 26, Austinfriars, at least fourteen clear days before the day of election.

By order of the court of directors,
26, Austinfriars, Dec. 27. WILLIAM LECKIE, Sec. 12

GREAT WHEAL CHARLOTTE MINING ASSOCIATION.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the shareholders will be held at the George and Vulture Tavern, Cornhill, on Monday, the 24th January, at One o'clock precisely, for the purpose of taking into consideration the state of the mine, and the expediency of raising further capital for the working of the same.

Lawrence Fountney-hill, January 7. 13

"INDUSTRY—ECONOMY—PERSEVERANCE."

MINING COMPANY OF IRELAND.—The board of directors of the Mining Company of Ireland hereby give notice, that a DIVIDEND for the half-year ending 1st Dec. inst. at the rate of FIFTEEN PER CENT. per annum, upon the company's deposited capital stock, will be payable, on and after the 1st of February next, at the company's office, No. 27, Lower Ormond-quay, Dublin. The books for transfer will be closed from the 15th inst. to the 1st of February.

Dublin, Jan. 10. By order, RICHARD PURDY. 14

PRINCE ALBERT MINE, Northmolton, Devon.—Notice is hereby given, that all persons indebted to Mr. Daniel Skewes, late an adventurer in this mine, are requested forthwith to pay the amount to Messrs. Robins and Son; and all persons having any claims on the said Daniel Skewes, as such adventurer or otherwise, previously to the 27th June, 1841 (at which time he disposed of all his interest in the said mine), are requested immediately to send the particulars thereof to the said Messrs. Robins and Son, that the same may be examined and settled. ROBINS and SON.

Dated January 11. Solicitors, Tavistock, Devon. 15

REETH CONSOLIDATED MINING COMPANY.—SIXTH CALL.—The directors of the Reeth Consolidated Mining Company hereby give notice, that they have this day made a CALL of SEVEN SHILLINGS and SIX-PENCE per share upon the shares of this company, and the proprietors of shares therein are requested to pay the amount, on or before the 21st of February next, at the bank of Messrs. William Williams Brown, Charles Barr, and Co., bankers, Leeds. By order of the directors, JOHN BLACKBURN, Sec.

Company's office, 26, Albion-street, Leeds, Dec. 27. 16

N.B.—Shareholders neglecting to pay their calls, according to notice, will incur the absolute forfeiture of their shares.

THE LATE WHERRY MINING COMPANY, CORNWALL.—All persons having any claims on this company, are requested to send an account thereof, on or before the 16th day of January inst., to the offices of Messrs. Millett and Borlase, Penzance, solicitors to the late directors.

Penzance, Jan. 11. 17

BRISTOL AND EXETER RAILWAY.—TENDERS FOR LOANS ON DEBENTURE.—The directors of this company are ready to receive TENDERS of LOANS of MONEY on DEBENTURES, to be issued in conformity with the Act of Parliament, secured on their undertaking, and on the rents, rates, and tolls arising therefrom, in sums of not less than £100, for terms of three, five, seven, or ten years, on interest at the rate of 5 per cent. per annum, payable half yearly at the bank of Messrs. Glyn, Halifax, Mills, and Co., London. The tenders must express the sums and terms of years, and be addressed to the secretary, at the company's offices, in Prince's-street, London, or Broad-street, Bristol.

By order of the board of directors,
Office, 30, Broad-street, Bristol. J. B. BADHAM, Secretary. 18

BRISTOL AND EXETER RAILWAY.—CALL OF TEN POUNDS PER SHARE.—being the Eleventh Instalment, and making, with former calls, the sum of £70 per share.—The directors of this company, under the provisions of the Act of Incorporation, hereby give notice, that the proprietors of shares are required to pay, on or before the 31st of January inst., at any of the undermentioned banks, the sum of £10 on each of their respective shares—viz.:

London—Messrs. Glyn, Halifax, Mills, and Co.
Liverpool—The Bank of Liverpool.
Manchester—Messrs. W. Jones, Loyds, and Co.; the South Lancashire Bank.
Bristol—Messrs. Miles, Hardord, and Co.; Messrs. Sheffies, Ames, and Co.; Messrs. Stuckey and Co.'s Banking Company, or at either of their branches; the West of England and South Wales District Bank, or at either of its branches; the National Provincial Bank of England.
Exeter—Messrs. Sanders, Sons, and Co.; Messrs. Cole, Hedwyd, and Co.; the Devon and Cornwall Banking Co.; Messrs. Milford and Co.; the West of England and South Wales District Bank, or at either of its branches.

The bankers are instructed to charge interest at the rate of 5 per cent. per annum on all arrears.

FREDERICK RICKETTS, Chairman.
J. B. BADHAM, Secretary.

Office, 30, Broad-street, Bristol, Jan. 7.

Interest at the rate of 5 per cent. will be allowed on payments in anticipation of calls. 19

DUKE of CORNWALL'S HARBOUR and LAUNCESTON and VICTORIA RAILWAY COMPANY.—Notice is hereby given, that, pursuant to the Act of Parliament, the next HALF-YEARLY GENERAL MEETING of the proprietors of this company will be held at the London Tavern, Bishopsgate-street, on Thursday, the 27th of January inst., at One o'clock precisely.

3, Copthall-buildings, London, Jan. 6. GEORGE UYEDALE. 20

EUROPEAN GAS COMPANY.—Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the proprietors will be held on Thursday, the 27th inst., at the hour of Two o'clock precisely, at the office of the company, 30, Finsbury circus, London.

By order of the board, J. B. GREAVES. 21

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This simple affords the safest, cheapest, and most expeditious mode of effecting this very hazardous operation. From many testimonials to its excellence with which the Manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c. &c.—

"I am very glad to hear that my recommendations have been of any service to you. They have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name in the manner of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall. 22

SIMS'S IMPROVED STEAM-ENGINE.—Mr. JAMES SIMS (engineer, of Redruth, in the county of Cornwall,) begs to inform miners, manufacturers, steam-packet companies, &c., that having, by several experiments, now at work in Cornwall, proved the GREAT SAVING OF FUEL EFFECTED, and the great ADDITIONAL POWER OBTAINED, by his PATENT IMPROVED STEAM-ENGINE, is ready to engage for the manufacture of them on the following terms:—

An engine of 10 feet stroke, equal to the power of 80 80-inch cylinder Boulton and Watt single power pumping-engine, with boilers, and every metallic part complete	£2800	0	0
Equal to the power of a 70-inch cylinder, 10 feet stroke, with boilers, &c., as above	2100	0	0
Equal to the power of a 60-inch, &c., as above	1700	0	0
" " 50-inch, "	1400	0	0
" " 40-inch, "	1150	0	0
" " 30-inch, "	800	0	0

ROTARY ENGINES.

From 10 to 20-horse power, from £25 to £20 per horse power.
" 20 to 30 " " 24 to 22 "
" 30 to 40 " " 24 to 22 "
" 40 to 50 " " 22 to 20 "

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The above prices are for mining and manufacturing purposes—marine engines would be more expensive. Mr. Sims will also engage to alter single power pumping-engines, and will, by the alteration, engage, under a heavy penalty, to increase the power 100 per cent., without an increased consumption of fuel. And he will also further engage to alter double power Boulton and Watt engines, whether working rotary or reciprocally, and save one half of the fuel. Engines on the improved plan may be seen at work at the undermentioned places any day (Sundays excepted), viz.:—A large pumping-engine at the Carn Brea Mines, near Redruth; a stamping-engine at Cook's Kitchen Mine, adjoining; a winding engine at Peldice, Gwennap; and an engine for manufacturing purposes, at the Redruth Foundry. Engines on hand, and will soon be at work:—A 50-inch pumping-engine for the Foxdale Mines, the Isle of Man; a 47-inch pumping-engine at the North Downs Mines, near Redruth; a rotary engine, for winding and grinding copper ores, at the 20th Wheal Basset; two engines, for pumping and winding, for the Tavistock Manganese Mining Company; a winding-engine for the Westminster Mines, in Flintshire; and a winding-engine for the Carn Brea Mines.

STEAM POWER.—The BIRMINGHAM DISC ENGINE COMPANY request the attention of the public to their ENGINES, which are particularly suited for all kinds of mills and manufactories wherein steam power is required; for raising minerals and water from mines; for the application of steam power to agricultural operations; to drive sugar mills; and to draining fens. Disc engines have been employed in these various applications for a continued period, and their use has fully proved that they possess most important advantages as compared with engines of the old constructing. These advantages are founded on the small space occupied by the engine, the simplicity of its construction, and consequent reduced liability to get out of order; and they consist in a large saving in the first cost of engine power, a most important economy in fuel, and a great reduction in the constant expenses of wear and tear.

Full particulars of prices, with references to engines at work, will be forwarded (post free) on application to the Disc Engine Company, Berkeley-street, Birmingham. 24

SMOKE NUISANCE.—ECONOMY OF FUEL WITHOUT THE NUISANCE FROM SMOKE, by C. W. WILLIAMS'S AIR FURNACE.—The principle of this furnace consists in the mode by which the air is introduced to the gaseous matter evolved from coal, whereby a more perfect combustion of the constituents is effected, the process being conducted on true chemical principles, as explained by Mr. Williams, in his *Treatise on the Combustion of Coal*. A furnace constructed on this principle may, by permission, be daily seen in action at the Liverpool and Harrington Water-works, Soho-street, Liverpool.

For further information, apply to Dircks and Co., agents; to Wm. Routledge, engineer, 38, Princes-street, Manchester; or to Mr. C. W. Williams, Liverpool. 25

ANDREW SMITH'S PATENT WIRE ROPES, for standing rigging, lightning conductors, stropping of blocks, mining, railway, and general purposes; about half the size and weight of hempen ropes, and 25 per cent. cheaper. Testimonials to that effect, with specimens, may be seen, and every information obtained, at the office, 37, New Broad-street, city; manufactory, Mill-wall, Poplar; and also of the following agents:—

Robertson and Co., 12, Gorse Piazzas	Liverpool.
Matthias Dunn	Newcastle-on-Tyne.
Joseph Bothway	Plymouth.
John Thompson and Co.	Wigan.
J. T. Tregellas	Truro.
Thomas Mooney and Son	Dublin.
Perris and Nolan	Wicklow.
Coates and Young	Belfast.
James Kibble and Co.	Glasgow.
James Gunn	Leith.
J. M. Boutts, Clements's-lane, High-street	Dundee.

ANDREW SMITH'S PATENT WIRE ROPE.

This rope has been in use for standing rigging in her Majesty's Navy, and is a great number of merchant vessels, for upwards of six years, and is giving the highest satisfaction; the rope is also employed in various mines and railways in different parts of the kingdom. 26

COAL AND IRON MINES.

Just published, in 8vo., with index map, extra cloth boards, price 5s.,

THE AWARD OF THE DEAN FOREST MINING COMMISSIONERS, as to the COAL and IRON MINES in the FOREST of DEAN, rules and regulations for working the same, &c.

By THOMAS SOPWITH, F.G.S., Commissioner.

John Weale, 59, High Holborn, of whom also may be had a series of sixteen Plans engraved after the 20 inches by 20 inches, of the Dean Forest Mines, price 12s. or separate 2s. each. 27

NEW AND IMPORTANT WORK FOR ALL CONCERNED IN IRON WORKS

PRACTICAL TREATISE ON THE MANUFACTURE OF IRON.—J. DOBSON, 108, Chestnut-street, Philadelphia (U.S.), proposes to publish, by subscription, the following most important work:—

A COMPLETE THEORETICAL AND PRACTICAL TREATISE ON THE MANUFACTURE OF IRON,

Comprising a full account of its different ores, their analyses, &c., the various processes and ample descriptions of the furnaces, forges, rolling mills, &c., &c., with nearly seventy very large plates, which are all drawn to a scale, and may be considered as working drawings—to include a translation of the whole of the great work on iron of Messrs. Le Blanc and Walter, and contain all its numerous plates, with additions from other sources, and numerous analyses of the coal and iron ores of this country and Europe, together with the statistics of the coal and iron of the United States, and abstracts of the most important patents relating to iron, with critical remarks—also, an Essay on the Smelting of Iron with Anthracite Coal, as now practised in Pennsylvania, by S. W. Roberts, Esq., civil engineer, to be published under the superintendence of J. C. Booth, Esq., professor of chemistry applied to the arts, at the Franklin Institute. It is scarcely necessary to speak of the value of a work, such as this, which must be of the greatest interest to the practical iron master, as well as to every one connected, either directly or indirectly, in this most important subject. The great French work of Le Blanc and Walter, being confessedly the most complete that has yet appeared, it will be unprotected in this, with additions; the plates are all drawn to a scale, which will enable any one to construct, by their means, whatever may be required. The Essay on the Smelting of Iron with Anthracite Coal, by Mr. Roberts, will be found very interesting; it is the production of a gentleman of talents, and of sound judgment and unwearied research, who, highly favoured by his position, has given the subject much attention. The numerous analyses of the coal and iron ores, both of our own country and Europe, will afford much interesting and useful information, while the statistical portion will be drawn from the most authentic sources. Richard C. Taylor, Esq., a gentleman well known for his talents and assiduity in research, has promised his valuable assistance. It is also intended to give abstracts of the most important recent patents relating to iron, accompanied with critical remarks—the whole forming the most complete work on the subject that has yet been published in any country, and the only one of the kind in the English language.

Conditions:—The work will be put to press as soon as there are fifty subscribers, and but a limited edition will be published. It will be published in eight parts, each part to contain eight or more very large folio plates, with the corresponding text. The price per part will be five dollars, payable on delivery. As it is necessary to put the work to press as early as possible, gentlemen who may wish to subscribe will confer a favour by transmitting their names to the publisher without delay. 28

THE THAMES TUNNEL is Open every day (except Sunday) from Nine in the morning until Six in the evening, and is splendidly lighted with gas. The present entrance is on the Surrey side of the river, close to Rotherhithe Church. The shield has now reached the south of Wapping, from making the length of the Tunnel 1180 feet. Admittance, One Shilling each.

Notice.—The Tunnel will be shortly closed to the public, in order to make preparations for opening it as a thoroughfare for foot passengers.

By order, J. CHARLIER, Clerk to the Company.
Company's Office, Wellcroft-buildings, Wapping, Jan. 14, 1841. 29

N.B.—Conveyances to Rotherhithe, by omnibus, from Piccadilly, Charing Cross, Fleet-street, and Gracechurch-street; and, by steam boats, from Chelsea, Vauxhall, Lambeth, Hungerford, the Old Swan Pier, and London Bridge, to the Tunnel Pier at Wapping. Works, with plates descriptive of the works, are sold at the Tunnel, price One Shilling.

LAW INTELLIGENCE.

DISPUTED RIGHT TO RENEWAL OF LEASE—JUDGMENT.

VICE-CHANCELLORS' COURT—JAN. 11.

WALKER v. JEFFREYS.—In 1791 John Read, being the owner of certain tenements and parcels of arable, meadow, and pasture land, consisting of about forty-seven acres, situate at Tibbington, in the county of Stafford, which was subject to a mortgage to Abraham Cocker, and being also owner of the mines and minerals under the same land, was desirous of working such mines, for the benefit of himself and partners (*W. Banks* and *J. Dunnerey*), and for that purpose Cocker joined with him (Read) in conveying the premises to John Carpenter, in fee, to enable Carpenter to grant a lease of the same premises to Read and his partners. The lease was accordingly granted, and was for a term of forty-two years, reserving a rent for the surface and a royalty for the minerals, and it contained a covenant that the lessor would grant a renewed lease of the premises for a term of twenty-one years, to commence from the expiration of the first lease. The transfers, assignments, and other dealings with the property were afterwards numerous, and in the course of them the right to the surface became vested in some parties, and the right to the mines in other parties; and the title to the reversion in the premises was also the subject of several changes and devolutions. The first lease expired in 1833, and had not been renewed. The plaintiffs, who were tenants of the surface, and had erected valuable iron works upon it, applied in 1833 to the solicitors of the defendant for a new lease for the term of twenty-one years, they being entitled to the benefit of the covenants in the original lease. The defendant refused to make a further lease, and the present bill was filed two years and upwards after the refusal for a specific performance of the covenant to grant a new lease. The case was argued at Lincoln's-inn, in the sittings after Michaelmas Term.

His HONOUR this day delivered judgment, and after stating the facts of the case, and commenting on the delay of the plaintiffs in instituting the suit, said, that two grounds had been insisted upon as establishing the plaintiff's title to the lease—first, the covenant to grant it, which it was admitted the court would not decree to be performed if there had been any such negligence or misfeasance in working the mines or otherwise, as would constitute a breach of covenant on the part of the defendants; and secondly, that Carpenter and his representatives were trustees to grant the new lease independent of the conduct of the lessees, and that the refusal would be a breach of trust. Carpenter, however, was only a trustee to grant the lease, on the supposition that the lessees did their part. He was a trustee for both parties—a trustee to see the covenants of the lessee performed, as well as those of the lessor. It came, therefore, to the same question. The mines had not been worked since 1815, and it was admitted that they were what is technically termed "drowned out," and not in a state in which they could be worked. It was not impossible that this state of things was owing to the conduct of the lessee, and that the owners of the reversion were deprived of the advantages and profits of the mine and of their reserved royalties by the fact that the lessees had not properly dealt with the property of which they now sought a renewed lease. The court must first be satisfied as to this fact before it could hold them entitled to the further term. He would, therefore, direct an issue to try the question, whether the mines were drowned out by reason of any default in the lessees in not fully getting and regularly working the same mines, according to the covenants in the lease? He did not intend that these should be the exact words of the issue. It would be better to have the form of the issue discussed, so that the real question in this respect might be properly sent to trial, and, at the same time, the opinion of a court of law obtained upon the construction of the covenant.

INFRINGEMENT OF PATENT RIGHT.

ROLLS' COURT—JAN. 11.

WILSON v. TINDALL.—Mr. PEMBERTON (and with him Mr. Rotch and Mr. Hubbuck) moved to commit the defendant, William Tindall, for breach of the injunction granted last November, for restraining him from using the invention of the plaintiffs in the manufacture of candles from cocoa nut oil.

Mr. TURNER and Mr. WIGRAM, *contra*, said there had been no breach of the injunction, either directly or indirectly. The defendant had observed the order of the court, and the candles which he manufactured did not interfere with it. He communicated by letter to the plaintiffs on the 29th of December last, and the manner in which he made his candles from the oil of the cocoa-nut neither directly nor indirectly contravened or evaded the order of the court. He would undertake to keep an account of what he made.

Lord LANGDALE—The question was, whether what the defendant had done was a breach of the injunction. He might have made a valuable discovery entitling him to a patent, but it might be necessary for him to disclose it to the court.

Mr. PEMBERTON—The defendant had reduced the cocoa nut oil into the component parts of stearine and elaine, and in whatever manner that was done it was a breach of the injunction. He hoped the court would order the defendant to file his affidavits immediately.

Lord LANGDALE ordered the motion to come on upon Thursday week, next motion day.

SWANSEA COAL COMPANY—WERNFIELD COLLIERY.

VICE-CHANCELLORS' COURT—JAN. 12.

MORRIS v. VIVIAN.—His Honour, the Vice-Chancellor, was occupied during nearly the whole of the day in hearing the arguments of counsel in support of, and in opposition to, this motion, which was an application, on behalf of the plaintiff, for an injunction to restrain the defendants, who constitute the SWANSEA COAL COMPANY, from continuing upon the pit or shaft on the Wernfield Colliery, which is situate in Glamorganshire, or any pit or shaft not being sufficiently secure and made watertight, and from continuing or using any pit or shaft, work or device whatsoever, whereby or by means whereof the surface or crop water should be drained or directed into the plaintiff's colliery and works, or from draining or diverting, or permitting to be drained or directed, into the plaintiff's colliery or work the said surface or crop water, or any water which would otherwise, in its natural course, flow and find its way over the surface of the land or through the stratifications above the said colliery and works; and that the defendants might be further restrained from using the said shaft or pit until the same should be made secure and watertight, and from doing any act which would further loosen or render less watertight or secure the brick walling round the said pit. The plaintiff, Sir John Morris, Bart., is the lessee under the Duke of Beaufort and other persons of the Landore, the Pentre, and Werg Coal Collieries, which are situate in the neighbourhood of Swansea. The defendants are the SWANSEA COAL COMPANY, who are also possessed of, and are working, the Wernfield and Meyrtodwhill Collieries, which are situated in close vicinity to the plaintiff's colliery of Landore, they being only separated by a farm, the minerals beneath which have been long since worked out. The defendants, in 1830, in the course of working their colliery, had opened an old pit or shaft, which had been long since stopped up, the consequence of which was, the plaintiff alleged and complained that the surface or crop water from the defendants' mines flowed into the plaintiff's mine (the Landore) in such considerable quantities (1000 to 1400 gallons per hour) that it was impossible, even with the aid of a steam engine for pumping out the water, sufficiently to clear its index. Under these circumstances the present application was made for an injunction to restrain the defendants from using the pit or shaft until it was made secure and watertight, so as to prevent in future the great flow of crop water from the defendants' mines into the plaintiff's.

The VICE-CHANCELLOR was of opinion that the plaintiff had not, from what had appeared in evidence before the court, made out a sufficient case for the interposition of the authority of the court by injunction until the plaintiff should have established his legal right in a court of law. The motion should, therefore, for the present, stand over, the plaintiff to bring such action at law to try his legal right as he should be advised, with liberty, when the action should have been tried, for either party to apply to the court.—Injunction refused.

ANGLO-AMERICAN GOLD MINING ASSOCIATION.

COURT OF COMMON PLEAS—JAN. 12.

HARRISON v. HEATHMAN.—The SOLICITOR-GENERAL moved in this case, which was tried before Lord Chief Justice Tindal at the last Guildhall sittings, and reported in the *Mining Journal* of Saturday, December 18, for a rule to show cause why the verdict should not be entered for the defendants instead of the plaintiffs. The action was brought against the defendants, as shareholders of the Anglo-American Gold Mining Association, to recover the amount of certain bills of exchange drawn by Pecanha, the company's mining agent, upon Heathman, one of the directors and treasurer of the company, and taken up by the plaintiffs for the honour of the drawer, upon the faith of an agreement made on the 16th of December, 1835, between the plaintiffs and the directors of the company, that the plaintiffs should be indemnified for their advances in the event of their declining to become partners in the concern. To show that Heathman was a shareholder, the only evidence offered at the trial was, that he had been present at a meeting of the company held a week before the agreement, at which meeting certain resolutions were passed. The Solicitor-General, therefore, now contended that this was no evidence of partnership as against Heathman; and secondly, that even if he could be taken to be a partner, the directors had no authority to bind him by the agreement of the 16th of December, 1835. The only power which the directors could exercise was derived from the Deed of Settlement, and the provisions of that deed had not been complied with, as no notice had been given of the meeting of the 17th of December, one of the purposes for which it was convened. Thirdly, he contended that the company was an illegal one, and a nuisance in existence, upon the ground of the shares being transferable without any other restriction than the payment of the money due upon them; and he cited in support of this position "Duvergier v. Fellowes," 5 Bing. and "Bramah v. Woase," 2 Bing. 601.—The COURT granted the rule.

BRITISH IRON COMPANY—ACTION FOR CALLS.

COURT OF EXCHEQUER—JAN. 12.

SMITH v. MOORE.—Mr. KELLY applied to the court, with the permission of Baron Alderson, before whom the case had been at chambers, for leave to add certain pleas. The plaintiff was the officer entitled to sue for the British Iron Company, and the action was brought for the payment of calls. Although the company had an Act of Parliament, yet its constitution was entirely founded on certain Deeds of Settlement. By the first deed a majority of the directors were empowered, under certain provisos and within certain limits, to alter the constitution of the company. In the exercise of this power a majority of the directors did reduce the capital of the company from 2,000,000*l.* to 1,000,000*l.*, and the shares from 100*l.* each to 50*l.* The defendant bought shares after this alteration took place; and, as the directors had no right to make a call beyond the amount of the share, he supposed that 50*l.* was the largest sum which he would be called upon to pay. Subsequently, however, the directors again altered the constitution of the company, and gave it the original form, by which the plaintiff contended that the defendant became liable for 100*l.* per share. The defendant wished to put on the record, in addition to certain pleas that were allowed, a plea denying the proprietorship of those who transferred their shares to him, and several other pleas, to the consolidation of which into one he would not object if the other side would waive the objection of duplicity, all impeaching the legality of the meetings and the resolutions by which the old constitution of the company had been restored. Mr. Baron Alderson had ordered these pleas to be struck out, as he had understood that Mr. Justice Wightman had acted in a like manner in another case involving the same question; but at the same time had intimated a wish that the opinion of the full court should be taken.

Lord ABINGER—Take a rule to show cause.

ALLEGED FRAUDULENT IMITATION OF "BRAND."

COURT OF COMMON PLEAS—JAN. 13.

CRAWSHAY v. THOMPSON AND OTHERS.—Mr Serjeant SHEE moved in this case for a rule to show cause why the verdict which had been found for the defendants should not be set aside, and a new trial had, upon the ground of misdirection, or of the verdict being against evidence. The cause was tried before Lord Chief Justice Tindal, at the last Guildhall sittings, and was reported fully in the *Mining Journal*, of Saturday, Dec. 25; and it will, therefore, probably be recollected that the action was brought for the fraudulent imitation of the mark on the iron manufactured by the plaintiff. The Lord Chief Justice left it to the jury to say whether there was, in the first place, any imitation at all; and, secondly, whether the stamp on the iron made by the defendants was affixed for the purpose of getting possession of the market, or to the innocent execution of a foreign order. Of this direction the learned Serjeant complained, contending that the conduct of the defendants, in continuing to use the mark objected to, after notice from the plaintiff that it was an imitation of the stamp on his own iron, was evidence of a fraud in law.—The COURT, after some little deliberation, granted the rule.

LIABILITY OF SHAREHOLDERS.

COURT OF EXCHEQUER—JAN. 13.

HUTCHINSON v. DUKES.—Mr. KELLY moved for a rule calling on the plaintiff to show cause why a writ of *scire facias*, which had been issued against two gentlemen of the names of Childers and Chance, should not be set aside, and they be admitted to plead to and defend this action. The facts were the following:—The Agricultural and Commercial Bank of Ireland, which had had some transactions with a company called the St. George's Steam-packet Company, certain individuals belonging to both companies, was dissolved on the 19th of October, 1840. On the 14th of December, 1840, the defendant Dukes, who had been an officer of the bank, and the person to be sued by those having cause of action against it, gave a note for 500*l.* in the name of the bank to the plaintiff, who was an officer of the St. George's Steam-packet Company, and was induced to come over here to receive process, and to let judgment go by default, and final judgment be obtained in the speediest possible manner. A writ of *scire facias* was then sued out against his clients as shareholders in the bank, who instantly sent an agent to Dublin, and ultimately discovered the facts which he had detailed. These facts, however, though they would have been an answer to the original action, of which his client knew nothing until it had terminated and the *scire facias* had been issued, were no answer to the *scire facias*. Under these circumstances he trusted that their lordships would be disposed to assist them.

Lord ABINGER—Take a rule to show cause.

RAILWAY DEBENTURES.—*(From a Correspondent.)*—A recent decision in the Court of Queen's Bench (reported in the *Mining Journal* of the 4th December last), against a holder of a bond of the St. Helen's Railway Company, who had taken measures to obtain payment by stopping the tolls, has led, it appears, to considerable misapprehension on the subject of debentures in general. It is evident from the words of the decision of the court, that the St. Helen's Railway Act does not give the power to grant mortgages; but the Great Western and the Bristol and Exeter Railway Acts of Incorporation expressly constitute the debentures mortages of the freehold property of the line, its rents, rates, and tolls. Every Bristol and Exeter debenture, therefore, is a *bond fide* mortgage, and takes precedence of all other liabilities of the company, differing essentially from loan notes, which are simple contract debts.

DEVON AND CORNWALL RAILWAY.—A county meeting was held in the Shire-hall, Bodmin, on Wednesday week, for the purpose of receiving the report of the committee, appointed two years ago, to inquire into the practicability of obtaining a railway through the county of Cornwall. After the meeting had been addressed by several influential gentlemen, it was resolved that the reports be adopted, and that the committee be re-appointed, and requested to devise some means, with the assistance of the county generally, to liquidate the outstanding claims. The interest of the meeting was sadly affected by the late melancholy demise of Lord Falmouth, who was chairman of the committe, and greatly interested in the successful carrying out of the proposed undertaking.

NEW APPARATUS FOR TAKING SECTIONS AND FINDING LEVELS.—A correspondent of the *Mechanic and Chemist* writes that he has invented an apparatus for the better taking of sections and finding the level of any country; it consists of a narrow box, upon wheels, in which there is some machinery, that takes its motion from the wheels, and correctly marks on a sheet of paper, fixed on a particularly constructed drawing-board, the true section of the land it has passed over, on a small scale—thus showing the height and shape of both hill and dale. We should be glad to receive some further particulars of this ingenious contrivance, as, if practicable, it would be of great utility to mine surveyors, engineers, and contractors.

APPLICATION OF THE WIRE ROPE.—We were surprised, and not a little gratified, the other day, on taking a place by the Sunderland and Durham train, to find ourselves dragged along at decent railway speed by a genteel looking cord, instead of the cable or hawsers formerly in use upon that line. On inquiry we found that the new rope is wholly composed of wire, the different threads or wires being twisted together like as many strands in proper rope fashion. We question whether any other town can show such a rope. The length from the Moor station to Ryhope is about three miles, and is now regularly worked by "Davis's patent wire rope," which, we have no doubt, will speedily supersede the use of the hempen rope, not only where a stationary lateral pull is required, but also for raising the loads of coal from the bottom of the pit. The bulk of the wire rope is much less—its gross weight less—its cost, we believe, is less—and its durability, we presume, will be greater.—*Northern Times.*

ARTESIAN WELL AT GRENELLE.—At the Paris Academy of Sciences, on the 3d inst., M. Arago stated that the works in progress at the well, for drawing out the metallic tube from the bore, have been successfully terminated. After having got out 200 metres of the tube with the greatest difficulty, and only by cutting it into small pieces, M. Mulot found that the lower part of the tube was only flattened and not twisted; he gave, therefore, a circular form to the orifice of the bore, and then drilled into the upper part of the remainder of the tube for about a foot and a half, when a strong screw was fixed into this portion, and all was drawn out. A curious circumstance connected with the failure of the piping was, that the sand penetrated between the first and second series of pipes, and formed a sort of hard cement, which not only broke the shape of the tubes, but fixed them so tightly together that it was almost impossible to move them.

SPITAL-TONGUES' COLLIERY TUNNEL.—On Saturday, the 9th inst., this undertaking (belonging to Messrs. Porter and Latimer) was opened throughout from the colliery to the river Tyne, near the Glass-house Bridge. The length of the tunnel is two and a half miles; total descent from the entrance at the colliery to the level of the spouts for shipping the coals is 222 feet; it is intended to work the line by a stationary engine, the loaded waggons taking after them the rope to draw the empty waggons back; the power of the engine is 40-horse, and will draw thirty-two empty waggons back; and should the trade require the quantity, three rows, or twelve keels, could be shipped in an hour; the gauge of the rails is 4 feet 8½ inches; and the waggons, which are of an improved form, contain one shoulderm each. The tunnel, from end to end, is arched with bricks, and a stone inverted arch at bottom; dimensions inside are 7 feet 3 inches high, by 6 feet 3 inches wide.

TRIAL OF THE MACHINE FOR RAISING AND LOWERING MINERS AT TRESAVEAN MINE.

We learn by the *Falmouth Packet*, that the first trial of this machine took place on Wednesday week, in the presence of a large party assembled to witness the experiment—amongst others, Sir C. Lemon, Messrs. C. Fox, Enys, G. C. Fox, Dr. Barham, Mr. Robert Bize, the Revds. Canon Rogers, Punnett, Philpotts, Hockin, &c., &c., there were also a great many mine captains present. At two o'clock, the machine, which has been constructed to the depth of twenty-seven fathoms, was put into action, and lights being arranged in the shaft, after Mr. Loam the constructor, and Capt. Jennings, had descended, and ascended by it, several gentlemen tried its facilities. The Rev. Canon Rogers, Mr. C. Fox, and Mr. R. Hunt, made their descent to the bottom, and ascended again severally in the space of four minutes and a half, without the slightest fatigue, or difficulty of any kind. Sir Charles Lemon and many other gentlemen descended and ascended a few fathoms, all of whom expressed their admiration at the simplicity exhibited in the construction of the machine, and their satisfaction in its mode of operation. The miners themselves are much delighted with the plan, and expressed their confidence in its being successfully completed to the bottom of the mine (280 fathoms), when its good effects will be felt in saving them the fatigue of climbing by the ladders from that great depth.

This experiment may be looked upon as a most satisfactory one, and quite decisive as to the practicability of this principle. To those who are not acquainted with the plan, a short description of the machine may not prove uninteresting; two rods are connected by cranks with the moving power, which is in this instance a water-wheel; these rods work with a reciprocating motion; platforms are affixed to the rods at regular intervals, and coinciding with each other at the termination of each stroke; the men pass successively from one rod to the other till they are raised to the surface, or lowered to the bottom. We would direct the attention of the ingenious constructor to what appears to us a very important improvement to be made in this machine, which is, that a contrivance should be introduced for occasioning a cessation of motion for a few seconds, as the platforms come together, to allow time for the men to pass, under all circumstances, in safety from one rod to the other. The motion being regular, the passage is made without any difficulty by a person being fully awake to his situation; but circumstances might arise in which a man might not be enabled to change his position with sufficient quickness, and thus be placed in rather a dangerous situation. We cannot too much praise the liberal spirit in which the Tresavean adventurers have undertaken the construction of this machine, which we look upon as an era in the annals of mining, as no doubt, in the course of a few years, we shall find similar plans adopted in all the mining districts, and particularly in the collieries. We understand the Polytechnic Society, whose liberal encouragement has led to the present undertaking, have determined on endeavouring to form another fund, which may be appropriated to the use of the next mine which shall carry into execution a successful plan for raising and lowering the miners from their labour.

EXPLOSIONS IN COAL-PITS.

The following article was written with reference to the recent terrible explosion in a coal-pit near Barnsley:—The frequent occurrence of accidents by the explosion of what is familiarly termed "fire-damp" in coal-pits, a casualty invariably attended by a fearful sacrifice of life, and mutilations of an irremediable kind, renders investigation a duty of no ordinary importance—the cause originating in a spontaneous disengagement of explosive gas from the coal, during the process of working, is, therefore, beyond the power of science to control; but, it as certainly establishes the fact, that accidents of this nature must continue to appal us in the recital, with something very near to periodical regularity. We take up the subject, desiring to place investigation upon the same footing which other incidental perils receive, and to attract towards it the same views, more particularly on the part of coroners' juries, in their especial province of inquiry as to the best means of prevention, and of applying censure where such may have been neglected—in cases of railroad accidents, explosions in steam-boats, and in every instance where life is exposed to danger from the action of machinery, these salutary privileges of the coroner's jury have been exercised greatly to public advantage; it has happened only in mining casualties, where life has suddenly closed upon many victims, that the uniform verdict has been "accidental death," thus perpetuating an impression that no means can successfully be interposed to prevent the accumulation of inflammatory gases by which they are caused. Now, in looking closely at the subject, we incline to an opinion that the reliance placed upon the safety-lamp is the proximate cause of the greatest number of accidents which have occurred since it came into use. Two reasons may be alleged in support of this conclusion; the first, that this lamp, although really specific against explosion from a highly charged atmosphere, ceases to be so in the hands of the unskilful, negligent, or foolhardy workman, to whom it may be unwittingly intrusted. The second, that its introduction appeared to proprietors of mines as the best, and, indeed, the only protection science could devise; hence an apathy of inquiry as to the invention and application of other methods, and the resignation with which proprietors and juries arrive at the conclusion, that casualities of this description are not only unavoidable, but to be expected.

The catastrophe at Barnsley, we are told, was occasioned by a workman approaching a part of the pit where the air was impure, with a lamp not having the gauze upon it; no instance could more forcibly bring conviction that workmen cannot be intrusted with such an instrument, one of safety or depending solely on the perceptions or conduct of the individual in whose hands it may chance to be. The illustrious inventor of this lamp, when pointing out its uses, noted also the precautions to be observed. We well remember two lines among the splendid poetry of a contemporary of the great chemist, in which the lamp is introduced, as—

"Sir Humphrey Davy's lantern, by which coals
Are safely mined for—*in the way he mentions*,"

clearly implying the danger of any abandonment of caution in situations where its use became necessary; but it is very questionable whether explosions are less frequent, or can it be expected under circumstances which are unalterable, so long as the present system of working mines continues.

It happens in other mines that stagnant air, although not of the inflammable kind, impedes the working, being with difficulty removed by the slow process of the air-pump; while deep workings, whatever may be the description of mine, are rendered unwholesome from the want of the circulation of fresh air essential to the vigour of the workmen. Instances of interruption to mining operations are frequent in Cornwall, where the depth is considerable; but we have lately heard of the erection of a machine, extremely simple and inexpensive in construction, which has been manufactured at the Pavilion Iron Works, London, and is found fully to answer all the purposes of ventilation. It has been applied at the Tamar Silver and Lead Mines, under the direction of P. N. Johnson, Esq., the shaft being 132 fathoms in depth, and the level 400 fathoms; the gallery under working, then unapproachable from mephitic air, was cleared, and a current of fresh air established in twenty minutes. Thus much of the practicability of ventilating deep mines; and it would appear that precisely the same facility exists for exhausting coal mines of explosive air, or "fire-damp," and of securing the life and health of the miner. It will, therefore, surely be deemed inexcusable in the proprietors and overseers of mines if they fail to satisfy themselves on this point, and, if convinced, in promptly adopting means of safety at once simple and effective. Juries will also henceforth require that the common duties of humanity be not disregarded on the part of employers of large bodies of the most laborious among our population.—*Whitehaven Herald.*

COAL MINES.—Few persons, except those actually engaged in coal mines, know any thing of the interior of a colliery, or the usual method of working coal, the following sketch may, therefore, prove interesting to many of our readers:—The entrance is generally by means of a deep shaft, but sometimes by an adit or horizontal passage. As soon as the shaft is sunk down to the seam of coal, a long level, or gallery, is excavated, running the whole length of the property under which the seam is intended to be worked; from this level numerous passages, termed "boys," are driven in the coal at different angles, varying with the cleat of the coal, but, in Lancashire, often at right angles to it; these, according to the inclination of the strata, are so many different inclined planes. This is the state of the mine before the pillars are worked out, and parallel galleries, with their respective boys, are formed on the rise and dip of the coal. The levels are generally waggon-ways, of about five feet wide and five feet high. They, however, vary much in height with the thickness of the seams, the workable ones of which in Lancashire vary from fourteen inches to three yards in thickness, and the nature of the strata forming the roof or top of the coal. The coals, when hewn or blasted, are pushed down the boys by *foumlers*, and afterwards generally conveyed along the waggon-ways in corves, which are placed on small waggons that run on iron rails, and, when the height of the levels allow it, are drawn by ponies or donkeys; these corves are square boxes, each capable of containing about three cwt. of coal, having their lower parts shod with iron, like a sleigh. Women (who are dressed in the flannel frocks used by miners, with a belt round their loins) are generally employed in pushing or drawing the corves up and down the inclined planes, to and from the workings where the coal is obtained.—*From a correspondent.*

COAL TRADE.—The coals carried coastwise from the river Tyne, it is said, exceed 2,500,000 tons, and the quantity exported to foreign parts exceeds 1,500,000 tons annually.

LECTURES ON CIVIL ENGINEERING, WITH PRACTICAL ILLUSTRATIONS.

BY PROFESSOR VIGNOLES, C.E.

On Monday, the 10th inst., Professor Vignoles delivered his eighth lecture "On Civil Engineering." This being intended as a practical illustration of some interesting and important points, the lecture was delivered on the works of the railways situated at, or near, Wormwood Scrubbs, in place of being given, as usual, in the lecture room of University College.

The first point to which Mr. Vignoles directed the attention of the class was to the atmospheric railway, or, rather, a portion of railway laid down on that principle for experimental purposes, upon the line belonging to the West London Railway Company. The length of this experimental line is half a mile, and, according to the Professor's statement, it fully answered the purpose, and he, at some length, and with great ingenuity, explained the principles of the system. The iron tube first attracted attention; it is nine inches in diameter, with a grooved slit along the upper surface, which is closed by means of a valve of leather, strengthened by plates of iron, flat on the outside, and forming the segment of a circle on the inside, so as to complete the diameter of the tube when it is shut; at the edge of the valve is a composition of bees' wax and tallow, which renders the tube air tight. Next was examined the carriage, to which was attached a piston, fitting into the tube, and a very ingenious contrivance was shown, by which the valve was first opened and afterwards closed down, immediately after the piston had passed, however great the velocity of the carriage. The impossibility of procuring a perfect vacuum had long been assigned as the great objection to this principle of producing locomotion; but Professor Vignoles showed that a good working half vacuum was, by the simple contrivance he had explained, quite attainable and sufficient for practical purposes. The engine and air-pump were next severally examined and explained, and the lecturer then gave some very interesting explanations of matters connected with the present experimental railway; he stated that the air from the half mile of tube could be extracted in about one minute, while it would take nearly eight minutes for the leakage of the valve and air-tube to admit the air to fill the tube. In consequence of the imperfections in the present line, which had been merely laid down for experiment, the leakage was very much more considerable than when a perfect line should be formed for service, and the formation of a railway on the atmospheric principle would not exceed, perhaps, one-third of the cost of many of the great lines hitherto contracted for, as it would do away with much of the cutting and embankment, the slips of which had recently been so troublesome and dangerous, by the trains being able, on this method, to ascend considerable acclivities. The present experimental line had a rise of about one foot in 110, and he had gone along at the rate of forty-five miles an hour, notwithstanding the imperfections of the machinery and the wretched state of the line; he pointed out that it would be practicably impossible for a locomotive to travel upon such a line, as it would be off the rails immediately, in consequence of their being so uneven and loose; yet he had travelled at the rate he before mentioned, with perfect ease and safety, and, furthermore, the extreme simplicity of the machinery rendered it very unlikely to get out of order. A few weeks back the line was required suddenly for some experiment, and, although the tube was half full of ice, in less than half an hour every thing was in readiness, and the trial was very satisfactory. The power obtained by the present small tube is 1760 lbs., with an atmospheric pressure of about 8 lbs. per inch only. The engine employed to work the air-pump is sixteen or eighteen horse-power, and the economy of stationary over locomotive power was admitted by everybody. He concluded his remarks upon this interesting, and what promises to be most useful, application of the power of atmospheric pressure, by detailing, at some length, the minutiæ of the saving that would be effected by its general adoption, and stating that two miles were to be laid down upon the Dublin and Kingstown Railway, to try the experiment upon a larger scale, with a tube fifteen inches in diameter, and more perfect apparatus. The Professor then, as the party walked along the line, pointed out to the class various slips that had taken place, some of which were slight and others extensive; one part in particular situated between the Great Western and London and Birmingham Railways (which are here within a quarter of a mile of each other), attracted general attention, the whole, for nearly 100 yards, being a perfect chaos. A remarkable instance of a failure of a retaining wall here presented itself, it having, for about forty-five yards, been actually pushed forward off the foundation, to a distance of eight or ten feet, the wall still standing, which appeared to be about four feet thick, strongly built of brick and concrete, and strengthened with bands of iron and wood. The causes of this destruction were explained by Mr. Vignoles as arising from the lodgment of water, which, having no outlet, had settled the earth against the back of the retaining wall, turning the clay into mud, and, by the great additional weight, forcing it into the position in which it now appears. If the water had been cut off in time this would not have happened, and that water was the occasion of this accident seemed very apparent. The lecturer then pointed out the manner of supporting retaining walls. Several portions of the London and Birmingham and Great Western Railways were then examined, and much valuable information was given on the various contrivances made use of by these companies, and he concluded by appointing the class to meet on the Croydon and Brighton Railways the next morning, to proceed to the great slip near New Cross.

On Tuesday, the 11th inst., Professor Vignoles delivered his ninth lecture "On Civil Engineering," and, according to appointment, it was delivered at the great slip near New Cross, on the Croydon and Brighton Railways. The motive of this visit was to explain to the class the reason of, and to point out the means which might have been taken to have prevented the great slip which occurred there recently. On leaving the train, the Professor led the way to the spot, which is situated about half a mile from New Cross. The length of the slip is very considerable, the depth of the cutting very great, and the mass of earth that has slipped down from the top of the bank is of an imposing appearance. The appearance of the slip is as usual—perpendicular at the top for some depth, and then bulging out near the centre; a great number of labourers are employed in shifting the immense quantity of earth to be removed, in consequence of the slip, which is estimated at many thousands of yards. In the meantime, a convenient covered walk has been made for the passengers to pass from one train to another. On both sides of this cutting, for some distance along the line, slips have taken place, but on the left-hand side going from London, they are of but little importance, compared with the one that was to be particularly inspected by the class. The soil consists of the plastic or brick clay, with numerous strata of sand and gravel, the clay itself being very binding, but being, from the recurrence of these strata of sand and gravel, very liable to the infiltration of water; and, consequently, to slip when the up-drainage is not particularly attended to, and the most constant attention paid to every symptom of a slip being about to take place. The Professor then pointed out what he considered to have been the occasion of all the mischief. Nearly all along the slip the earth had given way at the side of a top drain, parallel with the railway, and in some places it was so apparent, that the declivity looked as if made purposely: this had invariably occurred where there were cross drains from the neighbouring ground (which is considerably elevated), leading into the main drain along the top of the cutting, and which, not being puddled, or made watertight, had allowed the water gradually, and during many months, to insinuate itself into the veins in the clay, and had at length forced the mass out as it appeared. He then stated, as his firm opinion, that the slip ought never to have taken place; the earth having stood for three years, was a sufficient proof that the slope was correctly laid out, and, finally, it could only have been by subsequent natural causes that the accident occurred, while, if the precaution of preventing the drainage from the upper fields getting into the body of the slope had been attended to in time, it might have prevented the slip, and it was obvious that the great evil—water—had been gradually insinuating itself into the bank a long time before. In another part of the cutting, he pointed out a place where a slip was expected to take place in the slope, but he disapproved of what had been done by way of precaution, and explained that any operation of making cuts or vertical holes in the slopes, which would admit water, ought to be avoided by all means in the engineer's power, instead of being encouraged; the apertures should be driven in horizontally, and brushwood drains introduced, or a kind of hurdle or *fascines*, which would act as a drain, and be extremely efficacious; on this principle he strongly objected to the cutting of slight surface drains on the slopes, as he thought them worse than useless, being more likely to admit the water than to drain it off. He alluded to a curious circumstance which had occurred a little higher up the line, where the railroad was made in what used to be the bed of the canal. It appeared that there was a spring, and the water, instead of finding its way out of the slopes, actually raised up the rails. Several other points of interest were then examined, and the lecturer concluded by stating that he should give one more lecture at the college, which would be a summary of, and complete the, first course.—The next course will begin about the middle of February, with an introductory and public lecture on internal communications.

ON THE EVAPORATION AND INCRUSTATION IN BOILERS.

BY C. W. WILLIAMS, ESQ.

[Read by the author at the Royal Victoria Gallery, Manchester, on Thursday, the 6th inst.—being in continuation of a paper, commenced on the 9th December, and inserted in the Journal on the 16th.]

On the last occasion of addressing this institution, I explained the causes of injuries to boilers, and proved that we were mistaken in some of them. I showed that the sediment in boilers takes two distinct forms—namely, that of a crystallised, solid incrustation, and that of a loose, muddy-like body, held only in suspension. I proved that the first could not be the cause of injury, inasmuch as it was of itself a good conductor of heat; but that the second—the floating matter—became a positive non-conductor, after the boiler was suffered to remain some hours at rest, and this dry matter allowed to subside, and become dry and hard. It cools into a solid state, so hard that some of it can scarcely be marked with a nail.—[Mr. Williams exhibited specimens of both the hard incrustation, taken out of a boiler, and the soft deposit, held in suspension in the water of a Manchester boiler.]—Since our last meeting I have pursued the inquiry, and have further proofs to submit to you on this subject.—[Mr. Williams exhibited a small tin model of a boiler, with a pin, or bar, formed of solid incrustation, passing from the boiler into the heated furnace, and he thus explained it:]—I have stated that, in land engines, no injury could arise to the plates, by any heat from the furnaces, beyond ordinary wear and tear, if attention was paid to cleanliness inside, and maintaining the water at its proper level. Marine boilers, however (as shown by the model exhibited), contain a series of narrow, ascending passages, ill adapted to the free circulation of the water, and are so constructed, that the parts exposed to the most intense heat are those most liable to be affected by the impediments which these passages interpose to the circulation of the water. Again, I observed, that "in marine boilers, bulging or rupture was never known, except where there was a deficiency of water, or what was equally injurious, when, from the peculiar construction of the flues, the free circulation of the water was impeded." I thus showed that the obstruction of the circulation of the water—by which, in point of fact, steam, instead of water, was kept in contact with the plate—was equally injurious in marine boilers to the water getting below its level; that, in either case, the result was, that, the recipient being changed from water to steam, the heat could not pass as rapidly as it was received by the metal; that, as I before observed, the conducting power of the metal was therefore obstructed—accumulation of heat took place in the plate, and the inevitable result was softening, expanding, bulging, and rupture. I will now give some illustrative proofs of these parts. I have here (exhibiting a model) a vessel with an iron conducting pin, and the one in action is exactly the same in size, shape, &c., only the pin, which, in this model, is of iron, is, in the one in operation, of incrustation. I was not able, on the last occasion, to distinguish which was the best conductor; but, when we came to test them, we found that there was an advantage in favour of the iron pin, and the table [which he now pointed to] shows the difference. The vessel is filled with water, which we will suppose now in process of boiling. The table begins at forty-six degrees for the temperature of the water; and, as it rises up to the boiling point (212 degrees), the pin of iron attains that temperature in thirteen minutes, that of incrustation in seventeen and a half minutes—so that the incrustation was very little behind it. The pin went into the furnace; the heat was transmitted longitudinally through the pin, and projected into the water; and yet the heat transmitted through that great length of incrustation was very nearly on a par with that of the iron, only four minutes and a half difference between them, before the incrustation also reached the boiling point. That, I think, is quite conclusive as to there being no injury to the plate by reason of any conducting power in the incrustation. When this was taken off a marine boiler it presented no obstruction to the heat; and we say that, when this incrustation is even as much as three inches thick, it is a sufficient conductor to save the plate. Now, it matters not whether the water be prevented approaching the plate, by reason of its being brought below the proper level, or by the violent ebullition and generation of steam; the bubbles of which effectually prevent the access of the water to the plate, and by which the heat cannot pass away as fast as it is received. Here is a model [exhibiting it], upon an accurate scale, of two furnaces of the steam-ship *Liverpool*, in which there were five furnaces. These two furnaces were four feet seven inches long, and five feet three inches deep, and this was a simple passage between, consequently, when there was intense heat in this fire, there was not a free circulation—it was, in fact, filled with steam; and, to prove that, I will mention a circumstance, which I only heard yesterday for the first time. I saw the engineer of the *Liverpool*, and I asked him—"Did you observe, in all your voyages, these plates giving way?" This plate [producing a boiler-plate, with a patch on it] is actually one of the plates of the *Liverpool*'s boiler. Here is a large patch; and there was another plate I saw which had two patches and one large crack in it; but this plate was taken from one of the sides of the furnace, and this was within five inches of the next plate, so that the whole generation of steam had to pass up a passage of five inches. This [pointing to a coloured diagram] represents a cross section of the same boiler. Though the water is supposed to be at the proper level here, and there was no danger in that respect, yet, from the circumstance of the five inches passage, it was not possible for the water to circulate freely. The consequence was, this got filled with steam, which being a bad recipient of heat, these plates necessarily got heated, and they bulged and broke, as you see.—[Mr. Williams exhibited small portions of boiler-plate, some bulged, others broken or torn.]—This bulging has been the cause of that fracture; that plate was taken out of one of the ordinary boilers at *Liverpool*; the heat was great—it could not transmit it sufficiently fast, and hence the bulging and fracture. This proves that it was steam. The engineer (and this is what I take care to ascertain in most boilers) had inserted a tube; through this water was supposed to pass—and what was the result? He could never draw off water at all, but only steam. He put in a pipe, with a cock outside, and it was always steam. If steam were generated in a rapidly ascending current this was not probable. A statement of what occurred in the *Liverpool*, in her fourth voyage to New York, will illustrate this. The furnace side plates continued every voyage to exhibit proofs of overheating and bulging, as in that which I have mentioned, in which are no less than two patches and one crack. The roofs of the furnaces never, however, were in the least injured, though exposed to the greatest heat, with one exception, the water being always maintained at the proper level. On one occasion, however, after blowing out a portion of the water, and which operation was done every four hours, the cocks were inadvertently left open, and the consequence was, that that portion of the boiler containing two furnaces was entirely emptied. The roof, as well as the side plates, were then found to be red-hot, and all collapsed. This section of the boiler had, therefore, to be bricked up, and thrown idle the rest of the voyage; but that was the only occasion in which, in the case of that vessel, with the worst constructed boiler ever made, the roof gave way, but in every voyage the sides gave way. There were two instances of it, one on each side of three plates. The point, then, to which I am desirous of directing attention is this, that, in seeking to protect the plates of boilers from injury, it is not to the fire, or the furnace, or the plates, we have to attend, but simply and solely to the nature of the recipient to which the heat is conveyed, as on this point rests the whole question of injury. Now, this will naturally be cavilled at by those who have been all their lives talking and writing of the danger of hard fating and incrustation, and the want of due proportions in the fire and flue surfaces. Yet I state the proposition broadly, that, if we look solely to the recipient and its heat-absorbing properties, we shall do all that can be done to prevent injuries, except that of over-pressure, which we are not now considering. What, then, are the recipients of heat which protect themselves? They are—1. Water. 2. Steam. 3. Air. 4. Incrustation—crystallised deposit. 5. Loose deposit—unconsolidated. We are all subject to any or all of these five in land boilers. There is no danger of the deposit in marine boilers, because it is cooled. Thus we see, that, while the water remains in contact with the plate, it can sustain no injury, since, being an excellent a recipient of it, the stream of heat, if we may so speak, is taken up as rapidly as it is passed along through the metal, and, consequently, the plate itself—the conductor—is unaffected beyond a certain point. Into that we shall go further on a future occasion; and, I trust, I shall be able to demonstrate what that point is, with sufficient accuracy for all practical purposes. We see also, that, when we changed the recipient from water to air—the latter being an extremely sluggish recipient—the stream of heat is interrupted and delayed, and accumulation necessarily takes place in the conductor; and, as I shall hereafter be able to show, that the analogy between the stream of heat and the stream of water through a tube is sufficiently close to establish the fact I am contending for. I will illustrate this view by this little machine [the model with two iron pins], which corresponds with that in action, except that, as I wanted to ascertain the temperature of the conductor, I made these two bars of iron to project a little inside the boiler; and, if I project it into an intense flame, the heat passes through, and boils the water. I have put two pins there, to ascertain what is the temperature of the conductor, because I am endeavouring to enforce this—that, so long as heat is transmitted through the conductor, we need not apprehend the conductor being injured. We have not sufficient gas here to try the experiment. However, I place the bulb of the thermometer between the two bars, the heat transmitted through them will raise the temperature in proportion that these bars, were they sentient beings, would tell us what they feel; but I want to establish the fact, that the heat this sustains is a very different thing from the heat which passes through it. There are, therefore, two temperatures to be attended to—one which the bar may be said to feel, and the other which it conveys.—[Mr. Williams then explained a diagram exhibiting the times of these two temperatures.]—Suppose the heat to issue out as water would through a porous body, with a certain current; when I set this going, this machine tells me what occurs. We started at a temperature of forty-four degrees for the conductor, the water being at forty degrees. In five minutes time the heat of the conductor rose to 160 and the water to 52. The temperatures continued rising till the water reached 212 degrees; and the temperature of the conductor, as indicated by the thermometer, was then 238 degrees in fifteen minutes. We have now got the water boiling, and have got a stationary heat. I am at a loss what names to give to these temperatures; I have called them statical, or local heat, and dynamic heat. To ascertain whether I have the fullest amount of statical heat (that is, the heat due to its *status*), I bring the bulb of the thermometer down, and rest it upon the conductor, and make it touch it. What is the statical heat?—That heat which, if the thing could speak, it would say, "I feel!" It remains stationary at 207 degrees for a length of time. But I want to decide the question whether that is to be burned or not. I turn the cock, and let the water out. What is that but changing the recipient from water to air? It is clear, then, that the heat issues out into the air; but, the air being a very bad recipient, what is the result? The current of heat cannot go out as fast as it did—it is delayed—an accumulation of heat takes place, and, if that accumulation goes on sufficiently, this would be red-hot of course. It rises to 360, 390, and 404 degrees, and it remains there. I ask, what is the reason that the thermometer rises to 404 degrees in air, and reaches only 258 or 270 degrees when the water is there? We must look, therefore, at two distinct classes of temperature, or at the temperature in two different points of view—namely, the temperature due to the body as a carrier, conductor, transmitter, or conveyer of heat; and the temperature due to the current or dynamic heat. I hope, on another occasion, to be able to show you why, and to what extent, and upon what principle, water is a better recipient than air. I have now to draw attention to the commonly received notion of the durability of a boiler being influenced by the temperature at which the furnaces are kept. We are all familiar with the opinion, that a boiler will not last as long with a quick, active firing, and rapid evaporation, from a greater heat in the furnace, as with slow combustion and slow evaporation. This position I am prepared to dispute, as all the facts I have been able to collect disprove the hitherto unquestioned doctrine. And there is one fact, which, if it stood alone, would disprove this allegation—viz., that those parts and plates which are most exposed, and subject to the direct influence of the greatest heat, are the least affected, and never give any indication of injury or deterioration, unless some accidental circumstance has occurred to prevent access of the water, as the side plates of the furnaces, and the region of the funnel base above the water line. Again, the plates which exhibit the greatest proofs of deterioration are found in the parts where the heat is the least, and where the temperature could not be sufficient to injure the structure of the plate. This at once settles the question, that heat is not the direct or immediate cause of deterioration, and that we must look to some other cause for it. The whole question of deterioration practically resolves itself into this, that, with quicker evaporation and more active firing there is a greater average risk from the consequences of neglect in keeping the boiler clean, and the water at its due level, and, in marine boilers, from the water being forced from its contact with the plates, under the influence of rapid evaporation and ebullition. It is true, neglect and mismanagement of the interior of boilers must be taken into account and provided for. But why not endeavour to correct the evil, rather than, by attributing the cause of such evil to a wrong source, have our attention diverted from the true remedy? Now, as a rapid action of the fuel, and a more intense heat, will give a greater evaporative effect, both as to time and amount of fuel—as in ordinary waggon and marine boilers—than slow combustion and slow evaporation with very large boilers, as on the Cornish plan, it becomes a question of great importance whether we should prefer the latter to the former—that is, inferior to superior process. This would be paying dearly, indeed, for ordinary attention and cleanliness in the boilers. What I desire is to put the question, as regards the scientific and practical application of heat, on the right footing; but, if we are to be deterred from giving utterance to our views and opinions, because they are opposed to old rules and proportions, and be subject to scurrilous insinuations and low-bred invective, then we had better at once proclaim that this is not the age of intellectual research, or ours the country of scientific improvement. To this feeling I for one am not disposed to yield; and, when I know the rapid strides which even this town has made, and the character of those I address, I will rely on being protected either from misrepresentation, or the imputation of wishing to ride rough-shod over an intellectual community, or the absurd idea of desiring to palm my *ipse dixit* on the world against reason or fact. As far as chemistry goes, I take credit for nothing but diligence in selecting, compiling, and applying to practice, the established judgments of the most enlightened men of the age. As to the facts I adduce, they are accessible to all; and, with respect to my inferences, I expect no one will exhibit appellatum from me against his reason.—[The remainder of Mr. Williams's communication was in answer to, and a refutation of, the letter addressed by Mr. Armstrong to the *Mining Journal*.]

A conversazione ensued. Mr. Williams exhibited a specimen of sediment from a Manchester boiler, which he said was not a crystallise deposit, but merely mud. Another specimen, which he took after the water had run away, was still soft, but was quite sufficient to produce heating and injury to the boiler, provided it were allowed to remain from Saturday to Monday. It then got sufficiently solid, or that, if a fire were lighted on Monday morning, the heat could not be transmitted through the plate with the same rapidity with which it was received; the plate got red hot, and all the natural consequences followed.—The CHAIRMAN asked if this would dissolve again after once becoming solidified?—Mr. WILLIAMS said it could not dissolve again, for this reason—the water could not not retain any more sulphate of lime.—[The CHAIRMAN: But it might be more mud.]—Whatever it was, the water was perfectly clear when it was put in, but whenever the water became saturated, and is still charged afresh, by evaporation it precipitates as much as it cannot hold, and this becomes a deposit.—Mr. RICHARD ROBERTS said, with respect to the loose mud met with generally in Manchester, he thought, that, while the fire was urged on the Monday morning, the quantity of water contained in the mud was quite sufficient to break up the mud afresh. In their boiler he never found anything but loose mud.—Mr. WILLIAMS then took the incrustation pin from the small furnace; and (the thermometer indicating a temperature of 160 degrees) the CHAIRMAN touched the end of the pin with his finger, and found it not very hot.—After some conversation, not eliciting anything requiring particular notice, Mr. WILLIAMS said that he hoped to be able to show, on a future occasion, that the positive temperature of the bar, when the water was boiling, could not be higher than 300 or 310 degrees. Within a certain distance, iron cooling as rapidly in water, the temperature would never go beyond a certain point, and that point far below anything that could do injury to the structure of the plate. He would then go into facts, to show why water should be the best recipient we had, for, he would undertake to say, we could not find a better—that is, we could not find a body to take heat, at the end of the bar, faster than water could take it.—In the course of some further conversation, Mr. RICHARD ROBERTS said, that, though water was so good a recipient, it was not desirable to have a greater depth of water in the boiler, because, in that case, steam was not generated so well. If a boiler were very full of water, it would not make above half the quantity of steam.—Mr. WILLIAMS said, he believed that was a point upon which engineers were not quite decided; it was a matter, as yet, *sub judice*.—Mr. ROBERTS said, the engine-drivers on railways know, that, if they got too much water, they could not get the same quantity of steam.—Mr. WILLIAMS: Query, does not that arise from their not having space for an equal quantity of steam?—Mr. ROBERTS: But it is not generated—it will not blow off at the safety-valves.—Mr. RYDER said, he had noticed in a small boiler of his own, that, if he filled it too much with water he could not get a sufficient quantity of steam to heat the bath.—Mr. ROBERTS said, that three or four of our engineers had got it into their heads, that it would improve the boiler to add one or two rows of tubes to it. Yet a number of engineers on the continent were just now having two rows taken out, because they could not get steam enough. One of our railway engineers, finding he could not get steam enough, opened the discharge cock, to let water off, and then got steam.—Mr. WILLIAMS: I wish you would institute a set of experiments as to this point, which, I confess, puzzles me, and I know that engineers are very much at issue upon the subject.—Mr. ROBERTS added that, in his opinion, a great length of flue was a great evil.

The CHAIRMAN paid a high compliment to Mr. Williams, in expressing the thanks of the meeting to that gentleman, for his interesting and valuable communication, which Mr. Williams suitably acknowledged.

MEETINGS OF SCIENTIFIC BODIES.
IN THE ENSUING WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOUR.
Royal Asiatic	14, Grafton-street	Saturday	3 P.M.
Statistical	4, St. Martin's-place	Monday	8 P.M.
British Architects	16, Grosvenor-street	Monday	8 P.M.
Medical	Bolt-court, Fleet-street	Monday	8 P.M.
Medico Botanical	32, Sackville-street	Monday	8 P.M.
Linnæan	Soho-square	Tuesday	8 P.M.
Horticultural	21, Regent-street	Tuesday	3 P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
London Electrical	Adelaide-street	Tuesday	8 P.M.
Chemical	47, Leicester-square	Tuesday	8 P.M.
Society of Arts	Adelphi	Wednesday	7½ P.M.
Geological	Somerset House	Wednesday	8½ P.M.
London Institution	Finsbury-circus	Wednesday	12 P.M.
Royal	Somerset House	Thursday	8½ P.M.
Antiquarian	Somerset House	Thursday	8 P.M.
Royal Institution	Albemarle-street	Friday	8½ P.M.
Botanical	20, Bedford-street, Cov. g.	Friday	8 P.M.
Royal Botanical	Regent's-park	Saturday	4 P.M.
Westminster Medical	Exeter Hall	Saturday	8 P.M.
Mathematical	Crispin-street, Spitalfields	Saturday	8 P.M.

PUBLIC COMPANIES.

MEETINGS.

Wherry Mining Company	Union Hotel, Penzance	Jan. 12	11.
National Patent Salt Company	77, John-street, Adelphi	13	1.
Consolidated Mines of Cobre Ass'n	26, Austinfriars	13	1.
City of London Gas-light, &c., Co.	Dorset-street, Fleet-street	13	3.
London Life Assurance Company	81, King William-street	13	12.
Bark Mining Company	Office, Guernsey	20	12.
London and Brighton Railway	London Tavern	20	1.
S. Metropolitan Gas Light & Coke Co.	Three Tuns Tavern, Borough	24	11.
Great Wheal Charlotte Mining Co.	George and Vulture Tavern	24	1.
St Dunstan'sville Mining Company	20, Birchin-lane	25	1.
Guardian Assurance Company	1, Lombard-street	26	12.
United Mexican Mining Ass'n	London Tavern	26	1.
Duke of Cornwall's Railway Co.	London Tavern	27	1.
London Caoutchouc Company	1, Bamborough-court, Basinghall-st.	28	1.

CALLS.

Irish Waste Land Im. Society	1l.	Jan. 15	As former calls.
Southampton Docks Company	5l.	15	London and Westminster Bank.
South Australian Banking Co.	2nd.	15	Currie and Co.
Royal Mail Steam Packet Co.	5l.	20	As former calls.
Rio Doce Company	1l.	22	Union Bank of London.
Bristol and Exeter Railway	10l.	31	As former calls.
South Consolidated Mining Co.	7s. 6d.	Feb. 21	Williams and Co.
Irish Waste Land Im. Society	1l.	April 15	As former calls.

DIVIDENDS.

National Provincial Bk. of Eng.	6 per cent	Bank	Jan. 15.
South Australian Banking Co.	6 per cent.	58, Old Broad-street	15.
Southwark Bridge Company	11l. per cent.	Office	15.
Royal Santiago Mining Co.	2l. 6s. 6d. p. s.	3, Broad-street buildings	17.
Mexican and S. American Co.	5s. per share.	Office	20.

NOTICES TO CORRESPONDENTS.

London and Brighton Railway.—We beg to draw the especial attention of the shareholders to a letter, inserted in another column, as containing matter deserving the most careful investigation on their assembling at the meeting on Thursday next.—The reports of the lectures by Mr. Vignoles should be read by all interested in railway undertakings.

Belphur Mines.—"B. E. D." is informed that we have not lost sight of the companies formed for working mines in the county Wicklow, or other "associations" connected with that district. We regret, however, to learn that the contemplated public meeting to have been held in the county, instead of "coming on," as we were advised, has "gone off" without even a report from the provisional committee. Better provision should have been made in the early stages, as a failure of this kind should ever be avoided. We should hope that party's grist had no influence.

Wood Paving.—We have received a communication from Mr. Parkin (in reference to the assertion of Mr. Lee Stevens, that certain statements contained in the letter of Mr. Parkin—inserted in the Journal of the 18th Dec.—were contrary to fact), in which he reiterates his declaration, "that Mr. Stevens was cautioned not to deliver a partial lecture on wood paving at the Southwark Literary Institution," &c., and asserts that he can adduce proof of its correctness. Mr. Parkin feels grieved that we should have declined inserting further correspondence on this subject, but, on consideration, we are sure he will agree with us, that, when all scientific consideration of the various plans submitted is merged into personal squabbles, no good can possibly result from its continuance, either to the public, the disputants, or to the Journal.

"Optimus," on Mine Surveying, in our next.

We shall be happy to hear from "A Miner," on the Power and Construction of Water-wheels, fully agreeing with him that a discussion on the subject must prove of infinite advantage to the miner.

"B. H. J."—We cannot insert questions of the nature required by our correspondent—he should address the *Mechanics' Magazine*.

We are happy to find Messrs. R. B. Watson and Co., shareholders, of Leeds, re-established in a business for which, from the opportunities we have had of judging, we believe them every way competent; but, though entertaining this opinion, and expressing it now, as well as on a former occasion, it is too much of them to expect that we should devote considerable space to publishing tables and circulars, the utility or importance of which may be questionable, merely because they may have occasioned much trouble in compilation. We shall be glad, however, to receive weekly reports, as on former occasions, which shall receive regular insertion.

"H." complaints respecting uncourteous conduct on the part of the lecturer at the Polytechnic Institution, on Thursday last, shall be inquired into; there must exist have been some cause for such—to say the least—loose remarks, and an abrupt termination of what should have been an interesting lecture.

We are compelled to postpone the paper on the Combustion of Coal and the Prevention of Smoke, by C. W. Williams, Esq., with the report of Professor Brande appended, until our next.

"R. J." (Liverpool).—Railways were in use in Northumberland in 1670.

We decline noticing the "outrage" at the College of Civil Engineers, on Saturday last, which was altogether a most disgraceful affair, and cannot fail proving detrimental, alike to the interests of the college and individuals concerned. We lament the occurrence, as being calculated to disgust the patrons of the institution, and may tend, unfortunately, to deprive similar establishments of the benefits arising from being honoured with the countenance of distinguished noblemen, who will, doubtless, be cautious of forming connections with bodies capable of such ungentlemanly conduct.

Received—Mr. S. D. Rogers—A. T. J. Martin—J. Greaves—"A Tinner."

In consequence of the numerous applications made to the Editor on subject of Mines Records which have appeared in the columns of the Mining Journal, with reference to returns or materials used in the working of mines and the construction of railways, accompanied, have been partially effected, whereby all information necessary can be acquired on application at the office of the Journal, as also reference made to the various models, plans, drawings, and specifications, and where specimens may be seen, it being intended to devote a room to that express purpose.—It is further announced, that measures are in course of being taken for rendering the office of the Mining Journal the medium of acquiring information on all matters connected with mineral property, where plans and particulars of estates and mining materials for disposal may be consulted and obtained. Experienced agents in the several mining districts will undertake surveys and furnish plans, sections, and reports, on mineral property and mining undertakings.

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, JANUARY 15, 1842.

We have before us the annual tabular statement compiled by Mr. Richards, of George yard, giving the official returns of the imports and exports of metals for the year 1841, with the stocks on hand, and prices during the like period—an abstract of which will be given in our next; while our object will be, in the present article, to take a brief review of the metal trade for the past twelve months, as exemplified by the tabular matter to which our attention is directed. Without entering into minute details, we shall content ourselves, as regards our exports, with observing on the comparative increase and decrease for the year 1840 and that last past—the increase being for the year 1841 over that of the preceding as follows:—Iron, 29,731 tons; steel, 1445 tons; cake copper, 113 tons; tin, 1866 tons; tin plates, 25,758 boxes; quicksilver, 606,352 lbs.; while the decrease in sheet copper, nails, &c., has been 1126 tons; in lead, 601 tons; and in spelter, 1650 tons. It will be well, and, indeed, sufficient for our present purpose, to show where the increase or decrease has mainly manifested itself, adding thereto such observations as may be considered pertinent to the object in view, and an explanatory of the causes to which such alterations are attributable.

In the article of iron, as already stated, an increase of 29,731 tons of bars, hoops, &c., has taken place in the past twelve months over the like period immediately antecedent, which is very considerable, when the exports of the two years are taken into consideration—that for 1840 being 107,347 tons, and for 1841, 137,126 tons, or an increase of 30 per cent. It is not, however to be assumed, from such increase, that our iron trade has improved, or even been in a healthy state, for, on reference to the price of bar-iron in February, we find it quoted at 8*l.* 5*s.* per ton, and in December at 6*l.* 15*s.*; the fact being, that the "make" was more than equal to the demand, and that sacrifices have been made to effect sales abroad or at home. In the exportation of steel the increase is 1445 tons, and in copper 113 tons; the latter is of little moment, comparatively, as the foreign markets are principally supplied by the ores of Cuba and Chili, which are imported into this country for the purpose of being smelted, and subsequently (with an admixture of our poorer ores) exported in quantities equal to the assumed metallic produce of the ores so imported. In copper, in sheets and nails, it will be observed there is a decrease of one-sixth—the diminution between the two years being 1126 tons, while in tin, in blocks and bars, the comparative quantities exported were, in 1840, 1879 tons, and that for 1841, 3145 tons, or an increase of 1266 tons, and in tin plates an increase of 25,758 boxes—the several exports for the years 1840 and 1841 being 191,216 and 216,974 boxes. Lead has decreased to a trifling extent; and, again, a considerable decrease has manifested itself in spelter—the exports for the past twelve months little more than exceeding 50 per cent. of those of the preceding year; the quantities being, for 1840, 3471 tons, and, for 1841, 1821 tons—leaving a decrease of 1650 tons. This diminution in our exports of spelter, with an advancing market (the price having mounted from 23*l.* 10*s.* in bond, in January last, to 40*l.* in Dec.), would, if compared with the increase in the exports of iron, and the reduction which has taken place in the price of that metal, appear perfectly anomalous, were there not peculiar causes which it is necessary to take into consideration ere we can arrive at any satisfactory conclusions. In the one case we import an article of foreign production, the scarcity of which, with the effect of speculation, raises the price nearly 100 per cent.; the demand in this market, from its increasing consumption daily increasing—and, further, our exports to India during the past twelve months not being one-half the quantity annually consumed, arising from stock in hand, which is now known to be worked up, or nearly so, and the advanced prices—while, with iron, we have a home manufacture, made to an extent beyond a wholesome demand, and hence the reduction in price, although our exports are increased; but the subject is so fertile, that we cannot indulge in further observations, but must confine ourselves to figures. In quicksilver the increase has been 606,352 lbs., as being the difference between 2,205,939 lbs. and 2,812,291 lbs.

We now proceed to note the quantities of foreign metals upon which duty has been paid for home consumption during the past year, as compared with the years 1839 and 1840. In iron, there is an increase of 5554 tons on 1840, and a decrease of 835 tons on that of the preceding year. As regards spelter, the quantities for the respective years, are as follow:—1839, 4760 tons; 1840, 4625 tons; and, for 1841, 3503 tons—showing a deficit of 1122 tons in the past twelve months, or nearly 25 per cent. This, we have already explained, is attributable to the falling off of the make in Poland and Silesia, in some measure arising from scarcity of the mineral (calamine), and hence the rise in the price of that article in this market having been so considerable, or from 65 to 70 per cent. in the past year. As relates to steel, copper, tin, and lead, the differences are too insignificant to require further notice than in a Statistical Table, having reference to metals, which we propose to give. In quicksilver, it will be observed, there is an increase on the past year, in some degree corresponding with our exports of that article, the several returns being—for 1839, 331,247 lbs; 1840, 227,378 lbs., which showed a falling off of 33 per cent; while in 1841 it had again advanced to 310,689 lbs.

The next subject of interest in the tables before us is that of stocks of foreign metals, on the 31st of December, in the past three years; these quantities will be found enumerated in the abstract of the tables referred to, and require here but little observation, except with reference to spelter and quicksilver, which will be found as follow:—In spelter, the respective stocks for the several years were—1839, 3650 tons; in 1840, 1930 tons; and, at the close of 1841, 2000 tons. The stock of quicksilver for the like periods is—1839, 162,500 lbs.; 1840, 700,000 lbs; and, 1841, only 150,000 lbs. That portion of the table relating to the prices of metals for the past year, and showing the variations which have taken place, we defer noticing, as its consideration involves subjects for which we have not space to enter upon.

In directing attention to the first Number of a series of papers, illustrative of a new system of Philosophy, and as such applicable to the structure of the earth, and affecting, as it does, the generally accepted opinions in the geological and mineralogical world, we feel it right, in the onset, to declare most distinctly that we do not adopt the opinions of the writer. It is not for us to discuss the correctness of his views, but rather to afford a medium, through our columns, of their being submitted to those more able to enter into so wide a field—one which must, indeed, from the infinite importance to be attached to the various links which form his theory, involve questions of a nature which, as connected with Scriptural history or scientific research, possess a claim on the attention of the professor of Christianity, as well as on the disciple of science.

Having said thus much, however imperfectly, the object being alone that of scrupulously avoiding any identification with the series of papers to which we invite attention, we may observe, that, on a perusal of the manuscript, we find, as illustrative of the theory attempted to be established, not only many original observations and facts, but such as must evidently have been the result of deep research and personal investigation, in many parts of the world. The axiom laid down by the writer is of a startling nature, inasmuch, that, if proved to be correct, the opinions heretofore entertained by the geologists of the age, and upon which their various systems are founded, must, in a great measure, be overturned. To those interested in investigations of this nature—and no man can be indifferent to the subjects treated upon, either in the whole or in part—we submit the series, trusting that the discussion, if any should ensue, will have the effect of enlightening men's minds, while the theory, as demonstrated by Mr. Montague, will be either established by the conclusive evidence he professes to be able to afford, or destroyed by the proofs founded on past experience, and those authorities on which we have rested and formed our deliberate opinion.

Iron Trade in France.—From the French papers of Tuesday, we learn that the Council-General of Agriculture, Manufactures, and Commerce, met in Paris, on Monday, for the discussion of the iron question, when a proposition was brought forward for permitting Belgian iron to enter France, in competition with French iron, for the construction of the great lines of railway now projected in that country, and the following calculations were laid before the meeting:—The total system of railroads now proposed to be constructed in France is to extend to 400 leagues, which will require 200,000 tons of wrought-iron. The constructing of those roads will occupy ten years, and therefore the annual consumption of iron, wrought and cast, will be only 25,000 tons. Belgium alone can produce 200,000 tons per annum, and as the demand in France would be only 25,000, it results that Belgium, with only the eighth part of what she produces, could completely invade the French market, to the great prejudice of French manufactures. Several persons having pretended that French manufactories were unable to furnish rails enough for forty leagues per annum, it has been shown, on the other side, that from 1838 to the 31st of last month, the period at which the contracts made between the companies lately created and the principal manufactories expired, there were furnished by the latter rails enough for 120 leagues, and this, too, with a fall of 20 per cent. in the price of the iron.

DATA FOR THE USE OF BLAST-FURNACE MANAGERS.

BY SAMUEL BALDWYN ROGERS, ESQ.

[Mineral and Metallurgical Chemist, Nant-y-glo, Monmouthshire.]

3.—THE LIMESTONE.

The quantity of limestone used in making a ton of pig-iron, in this district of country, will vary from 16 cwt. to 25 cwt., and this principally in consequence of the fluctuating amount of earthy residuums contained in the ores. Some of the poor mines will contain 2600 lbs. of earths in the quantity required to yield the ton of iron; others, again, as the rich mill cinder, and best Lancashire ore, will not contain one-tenth that amount, or 260 lbs.—hence a furnace manager will have to apportion the limestone in his charges to correspond with the amount and nature of the earthy matters of his mines, and which "amount" and "nature" can only be known by analysis. There is another difficulty, however, in the way of the operator, and that is the varying nature of the limestone itself. The result of hundreds of analyses has convinced me that no two strata of limestone, in the coal-field of this mineral district, are exactly alike; indeed, stones worked out of the same stratum or bed seldom continue of the same quality, for, say, twelvemonths together, particularly if a "fault," or dislocation, should occur in the bed; here, again, the smelter can only safely find his way by means of analysis.

A fair average of limestone required to the ton of iron will be 20 cwt., or 2240 lbs. This amount of stone will, if of good quality—say 94 per cent. of carbonate of lime—contain, 1st, 842·14 lbs. of calcium (the metallic base of lime), and 336·86 of oxygen, forming 1179 lbs. of oxide of calcium, usually termed pure, or caustic lime; 2d, 252·7 carbon, and 673·9 oxygen, constituting 926·6 carbonic acid, which, united to the 1179 of pure lime, will form 2105·6 lbs. of carbonate of lime; 3d, about 4 per cent., or 89·6 lbs. of the stone, will be foreign earths and oxides; and, lastly, 2 per cent. of water, or 44·8 lbs.—total, 2240 lbs. Some limestones will be nearly pure carbonate of lime and water, whilst others will contain foreign earths and oxides to the extent of 25 per cent., in which case great care should be taken in their selection for use in blast-furnaces—for instance, if silex or magnesia should greatly predominate in their composition, such stones will be inefficient in the smelting process, not only to the extent of their deficiency of lime, but to the quantity of that material negatived, as it were, in bringing into fusion the injurious excess of silex or magnesia.

The protoxide of iron will cause silex or alumine (which earths are, of themselves, scarcely fusible) to readily enter into fusion, at the temperature of a blast-furnace, but the results will be a black, and, what is usually termed a scowering cinder, with, perhaps, not one-half of the iron contained in the ores, and even that will be of a very impure description. A similar result would be produced with a deficient quantity of limestone; the iron, however, may be more in quantity, and of a somewhat better quality, yet a very considerable portion of it will remain in the cinder. But, when the lime is in sufficient quantity and effective quality, to bring the residuary earths of the materials into liquid fusion, then the affinity of silex and alumine for protoxide of iron will be overcome, and the compound results will be, 1st, a fluid, transparent, colourless (or, perhaps, with a slight tinge of green) glassy cinder, composed of all the foreign oxides of the limestone, the mines, and the fuel, and which cinder may, with due purification, be worked up into bottles, jars, carboys, and other glass results, and that almost immediately from the fall of the furnace; and, 2d, a dark grey pig-iron, alloyed with carbon, manganese, and small and variable portions of the metalloids calcium, silicium, aluminum, titanium, chromium, and vanadium, should the raw materials happen to contain the oxides of those respective metals; and should the alkalies, potash, soda, barytes, or strontian, be in the mines, fuels, or fluxes, their metallic bases would, more or less, be revived, and become alloyed with the pig-iron. The alloy of iron and potassium, and also that of sodium, will be a comparatively soft metal, and one easy of future purification; but the alloys of iron and the other metalloids, particularly silicium, will be hard, often brittle, and generally difficult to be reduced into pure bar-iron.

In this mineral district we have taken three distinct kinds of limestone—viz., 1st, the *silicious*, or stones in which silex will be, more or less, combined with carbonate of lime, water, and peroxide of iron. The proportions of silex will vary from 4 to 20 per cent. of the entire weight of the stone. Limestone, containing more than 6 per cent. of silex, will, at the works in question, seldom work well in the furnaces, but should they contain more than 10 per cent. let them be avoided entirely, if any way possible. 2d, the *aluminous*, or those in which alumine will be a component part, its proportions varying from 2 to 10 per cent. Although I have denominated this kind an aluminous limestone, it is not that alumine is, in quantity, the predominant impurity of the stone, which is very seldom the case, but because alumine, if equal in weight to half the amount of silex, will neutralise its injurious effects in the blast-furnace, and, therefore, a stone containing 2 per cent. of alumine and 4 of silex, or any other quantity of silex and alumine, if in this ratio, will, when used in due proportions, be a good flux for the iron mines of this country. An excess of alumine in these stones need never be apprehended. 3d, the *magnesian*, which is a limestone containing from 2 to 10 per cent. of magnesia. Peroxide of iron and silex are also found in these stones to the extent of from 4 to 12 per cent. of peroxide, and from 2 to sometimes 16 per cent. of silex. These limestones are, at their crops, or outbursts, of a brownish yellow, or fawn colour, and often of a sandy texture, and they are the worst sort that the smelter can use, for magnesia, even in small quantities, will very materially impede the fusion of the other earthy residuums of the materials in the furnace.

A stone that will burn into white lime exhibits a good criterion for the smelter; but the only sure way of proceeding is, as before repeatedly observed, by analysis. There are limestones in this district which are of a dark muddy blue colour, and some almost black; these contain a portion of free, or uncombined carbon, varying from 1 to 4 per cent. of their weight; their earthy impurities are alumine and silex, in which alumine generally prevails, consequently such stones will, if used in sufficient quantity, invariably work well with the silicious iron ores of this part of the country. Chalk, oyster shells, calcareous spar, fluate of lime, usually called "Derbyshire spar" (an excellent flux for blast-furnaces, if it could be obtained sufficiently cheap), and many other materials, may be used as fluxes for the silicious iron ores, or ores containing both alumine and silex; but for the calcareous kind, clay or shale, or materials in which alumine will predominate, are the natural fluxes, whilst the aluminous ores will require a portion of the calcareous to be added to them, so as effectually to bring their residuums into proper fusion; therefore, if an iron-work were to be established at some convenient spot, where the silicious, the aluminous, and the calcareous ores may be economically and constantly obtained in sufficient abundance—say, for instance, at Newport, in Monmouthshire, or Cardiff, in Glamorganshire (at either of which ports due supplies of the ores in question may be readily procured)—a result may be obtained that would be of a much more uniform and better quality than can possibly be made by any separate use of such mines, or by any binary combination of them, because their residuary earths, *i. e.*, their lime, their silex, and their alumine, would reciprocally neutralise and fuse each other, at the temperature of the blast-furnace, into a clear and nearly colourless glassy cinder, whereby the iron would be left entirely free to unite with the most desirable dose of carbon to produce the best, or at least, the purest possible species of pig iron—a result of this description would, with comparative ease, be convertible into wrought iron of a quality equal to that valuable kind usually termed "charcoal-iron," and at a cost very little, if any, exceeding that of the commonest bar-iron made in South Wales.

Dudley and Midland Geological Society.—We beg to remind our readers that the first *general* meeting of this society will be held at Dudley, on Monday next, the 17th inst. Lord Ward will preside on the occasion, and R. I. Murchison, President of the London Geological Society, will deliver the opening address. Dr. Buckland is also expected to be present, consequently the proceedings will be of a highly interesting nature to all who are interested in the progress of geological science. The museum, which will be opened on the same day, will, we understand, contain the most complete system of the fossils of the Silurian system which has yet been formed. Among them are many new and undescribed species, and some of the specimens are the most perfect which have hitherto been discovered. The museum is also enriched by a fine collection of vegetable fossils, as well as by a great variety of fossil fishes, from the coal measures of this district. Amongst the latter is a most magnificent specimen of the *Megalichthys Hibberti*, from Walsall, decidedly the finest known.

GEOLOGY—A NEW SYSTEM OF PHILOSOPHY.

BY HENRY GRAHAM MONTAGUE, ESQ.

INTRODUCTION.

Philosophy, the reasoning power and the energy of mind, leads the way to a correct knowledge of the most important, the most complex, and the most mysterious of the physical sciences—embracing in its investigations the production of all things, both in this world and in the innumerable planetary bodies revolving around it. It explains to man the nature and properties of matter, the principles proceeding therefrom, and the proximate principles produced by the operations of organic bodies, or developed in the union of these principles and proximate principles in the fossil and mineral kingdoms. Philosophy is the tree of knowledge, the several physical sciences being the branches thereof, bearing their intellectual fruit. It speaks of the living and the dead, of matter, of motion, of light, of heat, and of electricity—of the powers of matter in motion, and of the singularly beautiful results proceeding therefrom, as atomic particles, aggregates, planetary bodies, and systems. It exhibits life in its gradual development, the changes to which organic bodies are subjected when they enter the mineral kingdom; it displays the conditions which regulate matter in union, life in its forms, changes, and vicissitudes, the union of matter with matter, the systems of the universe, the endless changes to which materiality is subjected, and the secret and manifest causes of those changes. It speaks of ages, of revolutions past, and, by the richness of its acquisitions, furnishes reasoning ideas for that which is to come. A correct knowledge of nature enables man to think and speak with mathematical precision, to demonstrate truths, and to communicate the result of his association of ideas to others; it enlarges his mental capacities and powers, excites and directs his inquiries, and regulates his actions; it makes him familiar with form and substance, quantities and qualities, capacities and powers of organic and inorganic matter; it teaches him to speak of life, and the capacities and powers of life, of death, and of production proceeding from death; it teaches him to analyse substances, to give names to forms and properties, to speak of things manifest, but beyond the immediate cognisance of the senses, to resist, to overcome, to call into being, and to cause production and reproduction; it enables him to measure the distance of the stars, and to describe their revolutions, their capacities, and their powers; it enables him to lay down axioms built upon the bases of established facts, and arrived at by a chain of inductions, warranted by nature, and confirmed by observation; it is Result formed, fashioned, and gestured by mathematical rule.

The ears of those desirous to be wise are ever open to receive the impressive lessons of Nature, written by the finger of life on the resplendent volume of Production. The pure light of truth may, in weak minds, suffer an eclipse, and errors marked in the tables of times past may draw the veil of sanctity over things hidden from immediate observation; but the duty of the philosopher is to rend asunder this veil of mysticism, and to extract truths from the leaven of folly, error, and obscurity—to become a searcher of the mysteries of Nature, a beacon to the mind wandering in search of truth, and a light in which men may walk and become proficients in a right knowledge of themselves, and of all things around them—to speak in the simplicity of truth without aiming at display, by robing his thoughts in the garments of subtilty—to seek to convince by an appeal to Nature—to create a desire for knowledge, by disclosing to reflecting minds the vastness, the beauty, and order of his conceptions. He asks not, yet does he not disdain, the guidance of others; he feasts with avidity on the collected wisdom of ages long since passed away, and, strengthened by this intellectual food, he walks abroad upon the earth, admires its countless speaking beauties, explores its hidden wonders, and collecting and arranging the material offered to his use, adds to the fund of knowledge previously acquired by his fellow-men. Reason is his Mentor in his researches—Truth is his guide in his communications, and he presents Nature to the view, not as folly, and weakness, and madness would have her to be, but such as she really is, simple, beautiful, or sublime, amiable, or terrible—seeking to convince, not by the force of a name, or adventitious circumstance of fortune or position, or the still more discreditable mode of appealing to the weakness and follies of mankind, but by the stubbornness of his facts, and the simplicity and purity of his statements, confirmed by observation and experiment, and correct axioms derived therefrom.

It has hitherto been the business of the geologist and the natural philosopher, in the absence of information, to have recourse to hypothesis, or vague suppositions and conjectures of their own, founded upon errors and superstitions—thus they have substituted metaphysical subtilties for the simplicity of reasoning, and declamation and positive affirmation in the place of positive facts—seeking, in obscure terms and inventions of their own, to torture and perplex the uninitiated, who are truly desirous of instruction, by a barbarous jargon of terms, idle conceits, and dreamy illusions; Nature being thus obscured, as Bacon wisely observes, by "exotic flowers of rhetoric, arbitrary distinctions of forms and principles, methodical arrangements, satirical categories, plausible theories, pleasing similitudes, or dark and ambiguous sayings, and invariably positive affirmations." Thus it is in the multitude of conflicting opinions, arguments, and assertions, the end and aim of natural philosophy, which is to instruct the mind in natural objects, and give a correct and comprehensive view of causes of effects produced, burns obscured, or is totally lost.

Many modern philosophers, some of whom even now stand in bold outline before the public, hesitate not to conceal, pervert, or condemn truth, because truth condemns their absurdities; and thus it is, numerous invaluable facts are purposely concealed from the multitude, as being incompatible with the ideas entertained by the ignorant: but the right use of learning is to search into Nature, and, on acquiring correct conceptions of things from actual observation and experiment, to give such conceptions to the world in their purity and simplicity, and not to disfigure them by speculative opinions accordant with vulgar prejudices, and at variance with their own ideas. In truth, the unlimited credit given to authors, from the position they have held in society as men of learning, as also to worthless traditions and pious frauds, received and sanctified by our less enlightened forefathers, has ever proved, and still proves, although (fortunately, for the happiness of man in a less degree) the stumbling block to discovery, and the consequent triumph of truth. The absurdities of Woodward, Buffon, Whiston, Hutton, and his disciple Playfair, and numerous others, are still on record before us, but the impression made upon the public mind has disappeared before the rapid march of mind: still absurdities, equally great, and fathered with equal ability, are even now daily issuing from the cloisters of learning, much to the discouragement of truth, the springs of production being choked up by possibilities. Even Bacon falls into the vulgar error of setting boundaries to our discoveries, by laying down the axiom, "that all knowledge is to be limited to religion, and to be referred to use and action;" for, to what religion can knowledge be limited, or by what forms of religion can our discoveries be guided? Man may dispute the evidence of his own senses, but he cannot, at his will and pleasure, discard impressions derived from the concurrent testimonies of others, or from actual observation and experiment. Things manifest to the mind become ideas of the mind, indelibly stamped thereon, without reference to ideas previously received.

The philosopher, in his pursuit of truth, treads a thorny and perilous path; he has to conquer not only his own prejudices, but he has to encounter the deep-rooted prejudices, the follies, and antipathies of his fellow-men. As he advances, his difficulties and perplexities increase, from the want of sufficient firmness, on his part, to resist the opposing current of his own preconceived notions, or from not having tact and knowledge to resist and overcome the notions of others. Again, the multiplicity, and almost endless variety, of natural phenomena, their complexity and obscurity, have a tendency to distract the mind, and to cause it to diverge from the correct path of observation. Too often his fears overcome his determinations as he ventures to approach the sanctuary of nature, and to remove the veil of falsehood, which has concealed for ages past the idols of folly. The untutored savage often rejects the refinements of social life, and disclaims all inclination to advance in a knowledge of the arts and sciences, because he cannot comprehend their uses or the pleasures they produce. Men in civil society love the customs of their forefathers, because impressed upon them by habit, they become part and parcel of their being. Thus savage or civilized man is but the creature of circumstances that surround him, revolving constantly in his own circumscribed sphere, and seldom ambitious to enlarge it by the reception of new ideas. Custom is the boundary of little minds, and beyond this they consider it dangerous to advance: thus it is knowledge struggles into existence against the feelings, the opinions, and the wishes of the world. A fact elicited from Nature, or an axiom established from demonstrative truths, is received or condemned by the world as it suits the views and purposes of those who direct the minds of the multitude; the truth is seldom received or admired for its own sake, unless it happens to administer to the follies or the cupidity of men. The mind is prone to receive ideas in accordance with those previously received, rather than those which condemn existing ideas; thus it is the impure ore of imagination when amalgamated with notions current in society meets a more ready reception than the pure ore of truth, collected with care and assiduity from the rich and varied mines of Nature. Superstition is a loathsome weed, choking up every good quality of the mind, narrowing its proper conception of things, paralising its movements, poisoning its enjoyments, and standing in hostility to its advances; it is an opiate, feeding the mind with glittering ideas, but at the same time administering desolation and death to the animal frame.

The mirror of production is Truth; in Nature error is not found, for whatsoever is produced is produced, and as such it is a true result, being an acknowledged form or body. Motion in its operation is Nature, and the result proceeding from matter and motion is Nature; and therefore it is, the inquiring mind may rest assured, that there is nothing in Nature weak or imperfect. It is from the want of a right understanding of things that men condemn the works of Nature as imperfect, inasmuch as all results are, as regards themselves, perfect results; but being by necessity mutable and inconstant, and the subjects of incessant change, they are, therefore, but the perfect results of the moment. Thus it is mind is baffled in the pursuit of knowledge, incessant change being of necessity.

To arrive at certain conclusions upon which unerring axioms can be laid down, and from which demonstrative facts can be elicited, it is necessary that we should endeavour to advance to the fountain head, or primary cause or causes; and having discovered the primary cause, or causes, of origin of a compound body, we may then proceed to examine the body under its several changes and modifications, until it is lost to the view by separation of its parts, or its primary identity is lost by mechanical union with other forms and bodies; and in thus searching into Nature through the graduated scales of life and death, or production, decomposition, and change, this great truth must ever be borne in view, that the forces which regulate and guide the disposition, quantities, and qualities of organic and inorganic matter, and the changes to which they are subjected, are ever variable and inconstant, depending on local action and local accretion; that while some bodies have existed from the beginning of things, others have originated as necessary consequences of the continued advance of production, and others will continue to be produced, so long as this material world advances towards its matured or perfect state. Natural results are perfect or imperfect—they are perfect when, by the union of two or more bodies, a third body is invariably produced; thus all undecompounded bodies are termed perfect results, being in the union of matter with matter, constant and infallible—similar causes ever producing similar effects. These perfect results are mathematical truths—the law of Nature being, that matter unites with matter by the forces of affinity, cohesion, and specific gravity; the result of union by the force of specific gravity is a perfect result, the one body, in its condensed and expanded volume, having the capacity of reception of another body. The forces of affinity and cohesion produce imperfect results, the several matters being variably disposed within each other. To illustrate this more clearly—we say gold is a perfect result, but united with silver it is an imperfect result, being thus an union taking place from the forces of affinity and cohesion, but at the same time an imperfect union, varying in local admixtures in all its parts and qualities. Again, the air we breathe, upon analysis, is found to be a perfect result, being matter within matter, mathematically disposed; but taken in bulk of aggregate as one whole, it is an imperfect result, being variably compounded and variably diffused.

These are certain facts in philosophy, and are infallible truths in Nature; but when we forsake these facts to wander in the field of hypothesis, in seeking for causes of effects manifest, then it is the mind is apt to be deceived, for inductive science has no circumscribed limits, and the object in view is soon lost as we advance through the shadowy and trackless realms of imagination. Thus it is with professors of geology in the present day; limited in their field of observation, they rush to conclusions from local observation of phenomena, and having, as they suppose, found out the causes of effects produced, they dogmatically insist that such alone are the causes by which Nature obtains the result. Nature, in her incessant changes, acts by partial as by general laws, and local affections ever govern and direct change in all organic and inorganic bodies; but local or general, similar unions produce similar results, however varying the causes may be by which such results are produced; thus, carbonate of lime may be consolidated as limestone by atmospheric action, by volcanic action, or by the action of electricity or chemical union—the result, however varying the cause, being one result; the same may be said of numerous proximate principles, the union of matter with matter, from whence they proceed—varying perpetually, but the result is one result. Again, local compounds are locally produced, the causes of effects produced being locally displayed. Every stratum of the earth is, as it were, a separate leaf in the great volume of Production, wherein may be read a brief or comprehensive history of the past, being the sudden evolution of the moment, the work of days, of months, of years, or, perhaps, of countless generations—every stratum speaking of changes perpetual and diversified, of forms of organic existences, once basking in the sunshine of life, living, and, perchance, loving and enjoying. All are replete with interest to a philosophic mind—not simply as gratifying its love for all which is venerable for its antiquity—not as being productive of surprise and admiration, but as adding the dignity of power to man, and diffusing knowledge of Nature, and of Nature's productions, through the earth, rendering her thereby subservient to our wants and purposes.

The laws by which organic and inorganic bodies are produced—the changes to which all bodies are subjected—the modifications of change, arising from the accidental union of matter, have existed from the beginning of things, being necessary consequences developed and developing in the progress of change of this planetary body. Nature wants not the adventitious aid of miracles to originate, to strengthen, or to perfect her works, but, left to herself, by her own innate capacities, she finds means to perfect the end proposed, to call forth into action and reaction, to produce and to reproduce. The causes of many effects manifest to the senses must of necessity be for ever concealed from the knowledge of man; but all that is essential he should know—all that is necessary to advance his power—all that is necessary to the expansion of his intellect, to ensure him absolute control over earth, and the true enjoyment of life, is even now at his disposal. Science advances by facts collected, and every new fact adds to the general stock of knowledge, furnishing reasoning ideas and just conceptions of things previously hidden from the view; every new fact elicited from Nature leading the way to the discovery of facts still more important and conclusive, and to conceptions still more satisfactory.

It is truly remarked, by wise and discerning men, that, to the perfection of science, it is necessary that it should be built on its own foundations, by its own rules, and with its own materials. In order to acquire a true knowledge of Nature, it is necessary that man follow in the wake of Nature, instead of professing to guide her, and, in thus following her, to trust rather to the evidence of his senses than to preconceived ideas of his own, or to the expressed opinions of others. The mind, thirsting after knowledge, and having passed the rubicon, should put off the scholar and assume the master—should diverge from the common-beaten path, and explore ways hitherto untrodden and unknown. He who follows implicitly in the track of others must be content to be the humble gleaner of others; he is, in fact, but a solitary ray of light, shedding lustre on those who have gone before him, and necessarily eclipsed by the greater light; but when man, conscious of his own strength, diverges from the common-beaten track, by so doing brings new wonders to light, he becomes a superior luminary, around which the lesser stars must hereafter revolve. The expansion of mind is the triumph of intelligence which acknowledges no limits to its advance, for there is no limit to the acquisition of knowledge, which is the food of mind, other than the extent of capacity to receive and power to retain them.

IRON TRADE.—We learn, by the *Wolverhampton Chronicle*, that the price of iron will remain the same at the ironmasters' quarterly meetings which take place this week. The reductions which have in some cases been submitted to during the past quarter have been met in such a manner as to place the trade on a much more healthy footing than for some time past. The *prices of best cold blast pigs* range from 3*l.* 17*s.* 6*d.* to 4*l.* in Wolverhampton.

ORIGINAL CORRESPONDENCE.

ON THE CHEMICAL CONSTITUTION OF COAL.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I beg to reply to Mr. C. W. Williams's remarks on my *Essay on the Chemical Constitution of Coal*; but before proceeding to the subject matter of his remarks, I would, first of all, set him right on a subject upon which he has fallen into an error. Shortly after the date of my former letter, which was published in your Journal of the 11th ult., I perused Mr. Williams's book *On the Combustion of Coal*, and I there found the review of my essay by Dr. Kane, which has since been published in your Journal of the 25th ult. Finding from this document that both Dr. Kane and Mr. Williams had been led into some unaccountable error, in attributing to me opinions which I never entertained, and which are nowhere to be found in any of my writings, I considered that I should be acting more courteously to these gentlemen to inform them of the error they had fallen into, in order that they might themselves correct it, rather than that this error should be exposed by another person. I likewise considered that to an honourable mind it would be a pleasing duty voluntarily to acknowledge an unintentional error, if such had been committed; I therefore placed in the hands of both these gentlemen copies of my essay, by which they would find that not only had I not stated what they attributed to me, but the very opposite opinions were stated, in words far too strong and too explicit to be misunderstood. As these gentlemen, however, decline this course, I shall myself proceed to point out their mistakes. It was this which caused me to write to Mr. Williams as he states, and not the desire of a "personal altercation," as he imagines, which would be as unnecessary as it is foreign to my usual habits. Neither have I desired Mr. Williams directly to point out the errors; nor have I refused to state what those errors are, as Mr. Williams asserts in his letter. I have discharged what I considered to be an act of courtesy to these gentlemen, they must now excuse me if in defending my own opinions I should find it necessary to make remarks upon theirs.

Mr. Williams, in his book already quoted, and also again in his letter in your Journal of the 25th ult., states that he prefers giving Dr. Kane's instead of his own criticism of my essay. The value of Dr. Kane's correction I should not underrate, only, unfortunately, when he wrote his review he had never read my essay! How, then, he became possessed of my opinions I am quite unable to discover. I can only say that in the short abstract of my paper, published in the *Minutes of the Institution of Civil Engineers*, there are no traces of any such opinions as he attributes to me, and in the essay itself the opposite views are stated in terms as strong as language can convey. Dr. Kane notices six supposed errors of mine; I will reply to them *seriatim*.

1st. Dr. Kane attributes to me the opinion that light carburetted hydrogen is the first product of the distillation of coal; and he then proceeds to show that it is not so. In my essay, it is stated, "When the heat is quickly applied a large quantity of olefiant gas first distils, then follows carburetted hydrogen, and lastly a gas containing a much less proportion of carbon, inferior in density, as well as in illuminating power;" and, again, in a subsequent paragraph, it stated, "the early products of distillation always contain the most carbon, the quantity diminishing throughout the operation, and the last products consist nearly of pure hydrogen." I believe no language can be more opposite to the meaning, which Dr. Kane has attached to it, than are these quotations; and they agree exactly with what Dr. Kane himself shows to be the order of the gaseous production.

2d. Dr. Kane states "light carburetted hydrogen is more difficult to inflame than olefiant gas (Mr. Hood's paper states the reverse). Davy has fully proved this, and I have verified his result." The statement in my paper is not here correctly given. It is in that paper stated, "if the heat be more moderately and slowly applied, the gas which distils from the coal is very different in quality. Little or none of the olefiant gas is produced, but a gas similar in quality to the later products of the other mode of distillation is obtained"—in short, a gas very nearly approaching to pure hydrogen is produced, as Dr. Henry, Dr. Ure, and other chemists have proved. I have then quoted Sir Humphrey Davy's own words respecting the inflammability of different gases, by which he shows that hydrogen is more easily inflamed than olefiant gas; and where Davy mentions the inflammability of carburetted hydrogen it is not in its pure state, but generally in the state of fire-damp, which contains both carbonic acid and nitrogen, and is unquestionably less easily inflamed than either hydrogen or olefiant gas. In fact, Davy has shown that the admixture of small quantities of carbonic acid destroys the explosive character of carburetted hydrogen, which, in fact, then becomes almost identical with fire-damp. But this I conceive is not the case with the gas given out by the peculiar and very slow distillation of coal in the manner described in my essay, which appears to be little more than hydrogen gas, and would, therefore, be easily inflamed.

3d. The review also attributes to me (though not in direct terms) the opinion that the heat produced by olefiant gas in burning is less than that produced by the combustion of the same volume of light carburetted hydrogen. Nothing in the least resembling such an assertion is to be found either in the abstract, or in the essay itself, and I therefore merely deny the existence of any such opinion in my essay, without pretending to account for this opinion having been attributed to me.

4th. Dr. Kane states, "Mr. Hood is quite in error respecting the source of the ascensional power of gas and its law; it has nothing to do with the law of tranquil diffusion into space, with which he has confounded it." In my essay there is no confusion of gaseous diffusion with the law of the ascensional power of gases, simply because gaseous diffusion is never mentioned at all in connection with this subject, and, to the best of my belief, it is not even mentioned throughout the whole essay. What I have stated is, that the ascensional power of gases is inversely as the square root of their specific gravities. The power of gaseous diffusion is also similar to this in some respects. But if Dr. Kane is unaware that both these different functions are derived from the inverse power of the square root of the density, he has no right to charge upon me the error which arises with himself. In an essay of mine, *On the Efflux of Gaseous Fluids under Pressure*, read before the Institution of Civil Engineers last year, I have investigated this law of the ascension of gases at some length, by reference to experiments on a large scale, and have compared the theorems of all the principal mathematical writers on the subject, and it is proved that if A represents the difference in height of two columns of gas, of the same total weight, but of unequal density, and B the velocity which a body will acquire at the end of one second by falling freely in space, the velocity of efflux of the lighter gas from an aperture, when pressed by the heavier, will be $V = \sqrt{(A B)}$. This is precisely what is stated in my essay on coal, which Dr. Kane mistakes for the law of gaseous diffusion.

5th. It is stated in the review that I am "wrong also respecting the source of the great heating powers of the resin fuel. The idea of an increased draught from the quantity of vapour formed is also quite incorrect." As no reasons are given for these opinions, nor is it stated what my supposed opinions are, I am not able to combat these statements; but seeing that Dr. Kane had never read my paper when he wrote them, perhaps my opinions may be worth as much as his. At all events, my opinion on this subject, whether it be right or wrong, is exactly the same as Dr. Kane's (as stated in the following objection), so that if my opinion (which is stated at length in my essay) be wrong so must Dr. Kane's be also. As regards the increased draught by reason of the vapour, this necessarily follows from the law of efflux above stated.

6th. Dr. Kane states, "there is nothing gained by the production of a gas requiring less oxygen (as Mr. Hood supposes) than olefiant gas does, for there would then be less heat produced. The quantity of heat evolved in the burning of any body is proportional to the quantity of oxygen absorbed, and it is hence the interest of the operator to use as much oxygen as possible, instead of the reverse." Here, again, I have to deny any such statement having been made by me, or of anything which can even bear the semblance of such an opinion. The only passage which at all bears upon the subject is where I have described a very old plan of preventing smoke by heating the coals gradually, and producing a slow distillation of the gases; but I do not state that more heat will be produced by this method, I only state there will be less smoke, and therefore a saving of fuel above the common plan of allowing the smoke to escape.

Having now replied to the whole of Dr. Kane's remarks, and shown that in every one of the instances where he has attributed erroneous views to me, he has given as my opinion statements the very reverse of those which are really asserted in my essay, I cannot avoid expressing my surprise that a gentleman of Dr. Kane's standing in the scientific world should

have so far forgotten what was due to his own reputation, as well as to the courtesies usually existing between men of science, as to publish decided statements upon another man's labours and opinions, without taking the trouble to learn correctly what those opinions were. If this is the usual mode Dr. Kane pursues, in reviewing the works of others, probably less reliance will in future be placed upon his opinion than has hitherto been the case; and though I would willingly, if it were possible, exonerate Dr. Kane from intentionally misstating my opinions, I cannot acquit him, under any circumstances, of having adopted a most unusual, as well as a most improper, course in reviewing a work from a very short, and, therefore, necessarily imperfect abstract of it—but which abstract even will not admit of any such interpretation as he has put upon it, while the essay itself most fully disproves his assertions in every particular.

To Mr. Williams's proceedings also I have much to object. He acknowledges to have read my manuscript at the Institution of Civil Engineers, and he therefore must have known, or, at least, he ought to have known, at the time that he published Dr. Kane's review in his *Treatise on the Combustion of Coal*, that the opinions contained in the essay were not those which Dr. Kane stated. Whether Mr. Williams expects to add to his own reputation by attributing errors to others, which are totally at variance with what they have stated, I shall not now inquire. He promises to point out further errors in my essay, and it remains to be seen whether they are similar in character to those already enumerated. If this is the way he interprets the maxim, *hanc veniam petimus damusque vicissim*—which is the mode in which he proposed in a former letter to discuss this question—I would beg to decline the privilege it confers upon me, and would rather adopt the motto, *veritas nihil veretur nisi abscondi*. I would not have it imagined that I object, in the slightest degree, to the fullest discussion or animadversion on any published opinions of mine. I am quite able, as well as quite willing, to defend them, and I only request that my opinions may be fairly stated, and not, as in the present case, that expressions the very reverse of what I have used should be attributed to me. Having recently read Mr. Williams's work *On the Combustion of Coal*, I will, in a subsequent letter, point out the errors which it contains, some of which will, perhaps, afford an answer to the inquiries of your correspondents, relative to certain effects which have been observed in Mr. Williams's furnaces. CHARLES HOOD.

Earl-street, January 10.

ON THE COMBUSTION OF COAL.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having been called on by Mr. Charles Hood to retract my assertion, that there were several chemical errors in his paper *On the Combustion of Coal*, I began by giving Dr. Kane's opinion of some of those errors. This was inserted in your Journal of the 25th of December last, and I propose following it up, with some additional observations as to the further variance between Mr. Hood and the best chemical opinions of the day, for if I were to say I would "correct these errors," I would, doubtless, be charged with "riding rough shod" over wiser men, and broaching some "new theory," when, in fact, I was merely pointing to where Mr. Hood was in error, and where he differs, not from my own opinion alone, but that of the best established chemical authorities, and on points which now admit of no dispute. At present I refer to a paper by Mr. Hood in your Journal of the 8th inst., which appears to have been also sent to the London Smoke Nuisance Committee.

In that paper, Mr. Hood says, he has shown that "the various modes of consuming smoke in furnaces is referrible to two distinct principles—viz., 1st, by bringing heated air in contact with the gases; and, 2d, by causing the coals to be more gradually exposed to the heat, by which means a different description of gas is produced, which burns with a smaller proportion of air." According to the best authorities this is incorrect, for it is not a different description of gas that is produced; the effect of a quicker or slower action of the fire being only that, with the former the proportion of bicarburetted is somewhat increased, the main body of the evolved gas being the carburetted hydrogen.

"By either mode," Mr. Hood observes, "the whole smoke of a furnace may be completely consumed." This, Sir, I deny, both in fact and in terms. By neither, nor by any mode, can "the whole smoke of a furnace be consumed." He adds, "so little is understood as to the cause of smoke, that compulsory measures would not be required if sufficient publicity were given to the *rationale*, both of its cause and cure." This I believe to be true, but most assuredly that "*rationale*" is not to be met with in Mr. Hood's paper. Again, he observes, "In my essay I have endeavoured to show in what the combustion of smoke depends." Now, I have examined that paper, and have been unable to discover any illustration of the kind beyond the statement of the above two methods, which are there given at length. As, however, it is just what I, in common with most other practical men, have been in search of, we could not have missed it had it been there.

In my own *Treatise on the Combustion of Coal*, I have stated that "the mere enunciation of the term, the 'combustion of smoke,' is *prima facie* evidence that the writer had not sufficiently considered the subject in its chemical relations. We can all understand the combustion of gas by which the generation of smoke is avoided, as we see in the Argand oil lamp or gas burner, but, as to the combustion of the smoke arising from the imperfect burning of the gas, it is not only unscientific, but incorrect—not to say, impossible." Mr. Hood observes, that "he has not met with the *rationale* of its causes and its cure in any scientific treatise." I quite agree with him on that point, having myself experienced the same difficulty, and hence the necessity of the inquiry to supply this manifest deficiency, from the want of which so many ingenious patentees have expended their labour and means in search of this *ignis fatuus*—the means of "consuming smoke."

Mr. Hood points out six modes of effecting the "combustion of smoke," yet I cannot see how, in any one of these cases, the effect intended can be effected, every one of his six plans being founded on a chemical error or physical oversight. But let us briefly examine them. 1st. "The gradually heating the coal in the anterior part of the furnace," &c. What this has to do with burning the smoke does not appear; and whether there shall be any smoke made or not will depend on other considerations not touched on. 2d. "Conveying atmospheric air to the upper stratum of the fuel on the furnace through heated brick flues." The same observation applies here also. 3d. "Causing a direct current of air to pass through metal pipes kept hot in the furnaces, such air, when thus heated, being delivered into the furnace above the fuel." This is identical with No. 2, with the disadvantage of using metal passages instead of brick ones. 4th. "Heating a current of air in tubes forming a part of the boiler, the air being then passed into the furnace above the fuel." This is but another edition of the former. 5th. "Blowing a current of air into the furnace either by the ash-pit, or as before, above the fuel." This is still the same principle. 6th. "Injecting steam into the chimney of the furnace," thus, "producing a more rapid draught." This is founded on his original error as to draught (see Dr. Kane's observations on Mr. Hood's paper, in the Journal of 25th of December ult.)

Now, the whole of the first five plans have those radical errors—that they introduce air (hot or cold) above the fuel in the furnaces where *different* combustion cannot have been effected, and where the gases being but just generated are necessarily yet too cool for chemical action; and, further, that they involve the question of hot air to the gases, than which there cannot be a more palpable physical and chemical oversight. If Mr. Hood still insists on the efficacy of these plans, I shall be happy to hear his distinct reasons, and discuss them with him.

Mr. Hood observes, that "the injection of steam into the chimney is the most simple mode which can be adopted for the consumption of smoke in steam-engine chimneys." This looks very like a mystery. That such a plan is ineffectual is daily proved in locomotive-engines using coals (as in Scotland), where the whole steam is injected into the chimney, the draught is very great, yet the mass of smoke generated is also very great. As for the error and oversight in the idea of effecting the "combustion of the smoke," I have never found them so prominently displayed in so short a space as in this very letter of Mr. Hood's—the "combustion, or burning, or consuming of smoke," appearing as low than seventeen times in this one letter. Now, inaccuracies of this kind in expression are virtually errors in practice. Coming from mechanical and superficial writers and thinkers such may pass unnoticed, but from a gentleman professing to be well informed on the subject, and looked up to as a guide, they have a mischievous tendency, and, with practical men, become in erroneous authority and as false lights. Now, when we speak of submitting anything to the process of combustion, and insist on our surveyors, as Mr. Hood does, who is even, I regret to find, offended at his doctrine being questioned, it is clear he lays himself open to the inquiry—What is it which he professes so to burn or consume? I ask, then, what is it he indicates, when he speaks of the "combustion of smoke?" I mean chemically, for a chemical investigation (and especially by one who professes to reason with the accuracy and certainty due to the atomic constitution of matter) demands a rigid and absolute precision. What, then, is this matter of smoke which he would teach us how to burn? What are its composition, character, nature, and properties? What quantity of air or oxygen does it require? and, What are the conditions of its combustion?

It was for the sake of correctness of reasoning, and that I might see my own way in practice, that I found it necessary to clear the ground for myself from that confusion of false premises and unsatisfactory inferences which prevailed among the host of "smoke burning" inventors, whose ingenious contrivances followed in such rapid succession, each in its turn destined but to disappoint both the inventors and the public. The accompanying analysis, of which I beg your insertion at your convenience, will explain my view of the subject. To be sure, however, that I was not deceiving myself, I submitted my paper to Professor Brande, and transmit to you his opinion also. If Mr. Hood will point out any errors into which I may have fallen in my analytical view of the subject, he will confer a great favour on me—all I am in search of are facts, chemically proved. If he will assist me in their development I will follow his suggestions—*si non his utere mecum*. C. W. WILLIAMS.

Liverpool, Jan. 10.

[The paper referred to will be inserted in our next.]

ECONOMY OF FUEL—PREVENTION OF SMOKE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—When I last addressed you on the subject of economising the fuel of steam-engines, and particularly on effecting it by burning or preventing smoke, I did not specify, as it now appears to be necessary, one particular point in the argument, which both Mr. Williams and Mr. Armstrong seem equally anxious to avoid, from which I infer that neither of them have any very clear conviction respecting it; I shall, therefore, say very little respecting the extraneous matter with which both parties have in your two last Journals pretty nearly smothered the only important point in the discussion, which is of any real interest to the manufacturer. The point I allude to, and on which the whole question of economy hinges, is the admission or non-admission of air at the back of the bridge.

It appears that Mr. Williams claims credit for the discovery of the production of carbonic oxide gas in furnaces, after the carburetted hydrogen gas is expended, and considers that the former requires an equal quantity of air for its complete combustion to the latter, and he therefore concludes that the supply of air to the gases behind the bridge should be uniform in all states of the fire, or whether there is a visible flame passing over the bridge or not—hence he also concludes that no "regulating valve" is required. This arrangement Mr. Armstrong considers to be productive of both injury to the boiler and waste of fuel, and, in denying Mr. Williams's claim to the discovery of this carbonic oxide gas, asserts that it ought to be burnt in front of, and not behind, the bridge; and, although this gentleman says that the burning or combustion of this gas has a very small heating effect—which I can easily believe—I think he is bound to show, if it is to be consumed at all, how it is to be supplied with atmospheric air or oxygen for the purpose within the grate room of the furnace, where only he says it ought to be consumed. It is true, that in some of Mr. Wakefield's patent furnaces I have seen numerous air holes for this purpose in the brickwork, both in the front and the back of the bridge; and any of your readers may see in the seventh volume of the *Repertory of Arts*, page 65, for August, 1828, the specification and drawings of another expired patent (Gilbertson's) for consuming smoke, in which the air is admitted through the thin apertures of a grating in front of the bridge.

Mr. Armstrong's theory, however, would exclude the use of the air, even in this way, for he says the air valve ought to be shut as soon as the flame from the carburetted hydrogen gas is expended. On the other hand, Mr. Williams is quite as far wrong in the opposite direction, when he contends that the admission of air to the gases requires no "regulation valve" at all, which I infer includes the assumption that the quantity of the carbonic oxide gas produced continues to be the same at the end of the process of its generation, that is, just before the fresh coal is thrown on the fire, as it was at its commencement. This assumption is, I think, contrary to fact, for it is evident that the generation of this gas must diminish gradually with the diminution of the red-hot cinders from which it is produced; while, at the same time, the atmospheric air obtains greater facility of access to the gas from this diminished obstruction to its passage through the fire-grate; both circumstances, in my opinion, tending to show the propriety of closing the air valve to some extent, at least at some intermediate period between the two firings.

Burnley, Jan. 13. A MANUFACTURER.

MR. WILLIAMS'S LECTURES ON STEAM BOILERS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As a constant reader of your valuable paper, I confess I am surprised to see in it to-day a statement by Mr. Williams, that it is not much read in Manchester. If your subscribers, in common with those in other London papers, are not so numerous here as in Liverpool, of which, however, I have no means of judging, I think he is mistaken as to your readers. It appears Mr. Williams is now giving a course of lectures on steam-boilers to the Victoria Gallery Institution, which is held in the Exchange dining-room, to which a number of individuals subscribe 1*l.* a-year. Now, it would be quite as erroneous to suppose, that, because his lecture attracted a very small auditory on Thursday last, it will be very little known; I can assure him that there are many, who, although proprietors of steam-engines, and much interested in the subject he has brought forward, like myself, much prefer reading his lecture in the *Guardian*, in the news-room below, free from the annoying—and, sometimes, irrelevant—observations of two or three (what shall I call them) chemists and druggists, who neither understand Mr. Williams nor the important subject he is upon. In this censure, of course, I do not include the always-pertinent remarks of Mr. Roberts, who is justly considered the first mechanic in Europe, and whose observations, I think, the reporter cuts off rather too briefly, Mr. Davies (the lecturer), Mr. Fairbairn (the celebrated engineer), and some others. In the last report, you omitted the name of this gentleman, but inserted a puff of C. W. Williams, Esq., instead, which was not in the *Guardian* report. As a lover of truth and fair play, and a partisan of neither Mr. Williams nor Mr. Armstrong, I trust you will give us the *Guardian's* report as it stands, which I therefore inclose, and your readers in Manchester will not be diminished on that account. A LOOKER ON.

Manchester, January 10.

[We are obliged to our correspondent for his attention in forwarding the report of Mr. C. W. Williams's lecture, with which, however, we had previously been provided; we agree with him that by far the most of those interested in the important discussion now going on in Manchester and elsewhere, prefer quietly reading a report, pruned of irrelevant matter, to attending the lecture-room, where the observations of really scientific men are frequently interrupted by the ignorant remarks of pseudo-chemists and others. "A Looker On" is in error, in accusing us of omitting the name of Mr. Fairbairn, of whose talents we entertain the highest opinion, and inserting a puff of Mr. Williams. We assure our correspondent we have no wish to deceive Mr. Fairbairn, or any other gentleman, of what credit may be due to him or them, and that the adoption of such a course, on our part, would prove most unacceptable to Mr. Williams, whose only object, we have reason to believe, is the eliciting and dissemination of scientific truths; the report was inserted entire, as furnished by a correspondent in Manchester, without the least alteration on our part.]

IRON TRADE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—It would be very interesting to your numerous readers (myself amongst the number), to be informed how many furnaces are in, and how many out of blast, at each establishment throughout the kingdom. A paragraph requesting the information, would, I have no doubt, be responded to by the various parties in each locality, as I have reason to know your Journal is read at nearly every iron work in the kingdom.

Cheltenham, January 10. C. L. H.

[We should be happy to afford the information required by our correspondent, but much fear the practicability of obtaining it so correctly as we could wish. We will, however, endeavour to collect the required data from the several districts, and perhaps our correspondent will procure the particulars from works with which he may be in communication, which will assist the object in view.]

SPELTER MANUFACTURE—BLACK-JACK.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I have noticed the two late letters of a "Black-Jack Miner," and your editorial remarks, and must say, his complaint of the first remarks—evading the question—equally applies to those in his second letter. You both leave in the back ground what is the real cause of the present low price of this English mineral, which is, "the great quantity of ore capable of being supplied beyond the demand for spelter of English make." Hitherto, from the nature of the English ore, the spelter made will not roll, and, as the consumption of that quality is limited, it cannot be expected to be made in this country beyond a limited extent. I calculate the consumption of England this year will be nearly 6000 tons, of which about 1500 will be used for amalgamation with copper, to produce brass, and which, for this country, is perhaps sufficient, while we are already making about 1100 tons from twenty-two furnaces, already erected, besides more now erecting. The mixed metal making by Messrs. Grenfell and Muntz, being for rolling purposes, must, I consider, be supplied by the foreign spelter, and the residue of the 6000 tons, being for pure sheet zinc, must come from the same source. There is, no doubt, an opening for still further production in this country, from this kind of spelter being available for brass purposes in France and elsewhere; but when it is considered the article cannot be produced here much under 20*l.* per ton, it would be a dangerous experiment to attempt to cope with foreign make, which, being produced from a less stubborn ore, and by a different process, destroying less coal, can be rendered at a far less price. The falling off in the general foreign produce, towards the particular required consumption, is the real cause of the late rise in price; and should this continue, as is possible, an opening will exist for extending the English make to a certain definable extent, though, from the great margin in price and profit to the foreign make, and the great expense in the furnaces here (and small results as to quantity producable by each furnace), it will be a work of time and great consideration to those embarking in this trade. If, however, this difficulty can be overcome, of rolling English spelter into good sheet zinc, and the present consumption of all countries, and the present confined foreign make continues, there would be an opening for an extension of make in England of at least 5000 tons annually; till then the "Black-Jack Miner" must keep his ore, if he will not sell at market price, what is now over produced. A. B.

London, January 13.

P.S.—There are some inaccuracies in the "Black-Jack Miner's" estimate for producing zinc in this country, the quantity of three tons of ore being probably insufficient, allowing for waste, &c., also on the average quality, while by modern inventions, as to furnace, draught, &c., the quantity of coals may be over-estimated; the grinding is omitted also, and the wages are too low. I should say, on general principles, 20*l.* would be a fair average of the cost of producing a ton of English spelter; this would still carry a large profit on present price, but when even last year it rose from 23*l.* 10*s.* to 40*l.*, is 38*l.* now, coming from 9*l.* in 1829, and averaged only 11*l.* for five years afterwards—went up to 23*l.* 10*s.* in 1836, and fell to 12*l.* in 1837—stood at 20*l.* about an average for 1838 and 1839—in 1840 was 22*l.*—it is surely rather to be considered a speculative article to enter into heavy expenses for the make of only small quantities, on an easily overstocked market. A. B.

["A. B." is an ingenious correspondent, and a shrewd observer, as his letters, inserted in our columns some two or three years since, clearly demonstrated; and that he is no friend to an increased make in England, as shown on that occasion, as well as the present, is, we consider, pretty manifest. Our correspondent considers our remarks on the first letter of a "Black-Jack Miner" as not being apposite, while the second letter, he tells us, equally evades the question, which is simply that of "the great quantity of ore capable of being supplied being beyond the demand for spelter of English make." If we did not convey our observations in the self-same words, we think the inference was clearly to be drawn, that there exists in this country a surplus supply of this description of ore, as we described it being treated in many cases as mere "refuse," or "attle." Now, admitting the general correctness of the views entertained by our correspondent, we must differ with him as to the impracticability of rolling English spelter, as also to certain data based on such premises. We also somewhat doubt whether the attempt to manufacture spelter in this country, on an extended scale, from "black-jack," is so dangerous an experiment as he contemplates, or the ore being of that stubborn nature he assumes; while we can assure him that his opinions as to the cost of the manufactured article, will be found to apply only to the one process, which is admitted to be extravagant, from the quantity of coal consumed, and the limited quantity of metal produced from the ore, without taking into consideration the improvements lately introduced. As we are advocates for the manufacture of English spelter, and for the employment of the British miner, with the application of our own mineral resources, we must enter our veto against the opinions promulgated by "A. B." As the subject has been again resumed in our columns, perhaps our correspondents, whose letters were inserted on a former occasion, to which we have referred, may be disposed again to take part in the discussion.]

ON THE LATE SLIP AT THE BRIGHTON AND CROYDON RAILWAYS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—It is with surprise I observe that the late accident on the Croydon line has been allowed to pass by comparatively unnoticed, when its extent is alone considered, not to advert to the fatal consequences which might have arisen had the slip taken place at the moment of the passing of a train, as stated to have been the case on the Great Western line. Being interested, as a shareholder, in the Brighton Railway, of which this may be considered to form a part, I am induced to trespass on your columns with a few remarks, the result of personal inquiry, and availing myself of some useful hints and observations which fell from Mr. Vignoles, who visited the spot on the 11th inst., of which I have been favoured with notes, and which I shall be happy to submit to your perusal. The point where the last slip took place is situated between Finch's-bridge and New Cross, the cutting being, I should suppose, full sixty feet deep, and upon a slope, or incline, of two—that is, two horizontal to one perpendicular, forming an angle of about thirty-three degrees. The earth is here of a clayey nature, being what, I believe, is termed the London plastic clay, from which bricks are made, interspersed with sand and gravel, which thereby renders it less compact, and, consequently, more subject to runs, or slips, such as have of late been of so frequent recurrence. The extent of the slip, I should say, was full 200 yards longitudinally, covering the rails for that distance, and appears to have been cut away from the upper part of the cutting rather by the work of art than that of nature, so perfect is the cutting, or vertical separation, in the soil effected by the percolation of the water, from the upper side, or surface, of the land, where a drain was made in the first instance. My object in drawing your attention, and that of your readers, to the subject, is to raise the question, at least if not to demonstrate, whether great blame is not attachable to some party for the neglect which here is rendered so apparent, of heavy cuttings, or embankments, of this nature not being regularly inspected, more especially when the many occurrences of a like nature should have engendered caution. It must be known to all who are in the slightest degree conversant with earthwork, that drainage forms an important feature, and although, in the present instance, I do not attempt to charge the engineer, who had the laying out and superintendence of the line, with having neglected to take the necessary precautionary measures, yet I cannot acquit the executive, with whom is left the keeping of the line in repair, and attending to the cuttings and embankments, of having displayed great ignorance or neglect.

The water, as I have already observed, was collected in a drain at the upper part of the cutting, which, instead of being puddled, to prevent the water entering the bank, and having a channel whereby it might have passed away, without doing injury to the sloping bank, of which it formed the head, has, from neglect, been allowed gradually to find its way, and form a passage into the bank, whereby its accumulation, acted upon, no doubt, by the alteration in the temperature, at one time freezing, thereby creating expansion, and again liberated—in which latter case it is absorbed by the earth—has evidently been the cause of this sad accident, which, I doubt not, from what I can learn, will be attended with a cost of from 8000*l.* to 10,000*l.* Now, Sir, I wish not to cavil with the directors, or their respected chairman, Mr. Wilkinson, as to the way in which they do things, but if I am to judge by the course pursued by them, in the removal of the earth, as in the application of the funds of the company, otherwise placed at their disposal, I should at once say that no dividend out of profits can ever be realised. That I should not, however, mislead you, I would only submit a few queries, the reply to which will at once satisfy you whether I am correct in my conclusions or otherwise. I would then ask, Sir, what is the estimated quantity of earth in cubic yards to remove? Whether the work is done by contract or day labour? What the number of men em-

ployed? What the amount already expended, and that further contemplated? I fear I have carried this somewhat discursive letter to an unreasonable length, but, should you give it insertion, I will endeavour to render my next more concise. The main object on the present occasion, in directing your notice, is the circumstance of a meeting of the shareholders in the Brighton Railway Company being called for Thursday next. As we pay a toll to the Croydon Railway, and are seriously affected by any accidents of this nature, whether arising from our own fault or theirs, and as in the present instance, I suppose we have no redress, it behoves the shareholders to institute a searching inquiry as to the causes to which the accident is attributable. If I am right, then ought a change to take place in the executive management. If I am wrong, the inquiry will, at least, do good, while it will go far to satisfy those sceptics of which I confess myself to be one.

D. K.

London, Jan. 14.

THE "STANDARD."

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In your Journal of this day week you appear to be under an expectation (from what you there expressed) that some of your mining friends would represent a case, and work out a solution, to elucidate the method of getting at the standard of copper ores. Having a little time on my hands, and that you may not be disappointed, I will, therefore, endeavour to furnish you with (I believe) the general rule for so doing. Be it understood, I now consider myself addressing some that are not accustomed to attend the ticketing room on the sale of ores, that those who usually make out the standard find it necessary, to facilitate the business while the ores are on sale, to get the produce of the different parcels of ore, and, as the sale goes on, to note down the price that each parcel sold at, to be enabled thereby to make out the average standard, and, in conclusion, to get the amount of ore money of all the ores sold. Having thus explained myself to those who are not acquainted with the usual process, I shall proceed to lay down the rule (I believe) in common practice.

First, multiply the number of tons in each parcel by the produce thereof, then add all the products together, and divide that sum by the total number of tons of ore sold, and that will give the average produce. Secondly, divide all the ore money produced by the sale by the number of tons, as before directed, and the quotient will be the average price per ton. Thirdly, and lastly, then add the returning charges—viz., 55s.—to the average price per ton, and say, if the average at so much per ton will give so much what will 100 give. Now, I will give a *bond fide* sale of ores, that took place some time ago in a mine to which I belong, which will serve as an abridged form to set forth and explain the mode acted on in a general sale of ores. Not being present, it is impossible to do otherwise. I have only introduced six parcels, which will, I hope, be quite sufficient to show the nature of the thing. Perhaps there is not one in fifty that even frequent the ticketing room that can make out the standard for themselves, but they generally wait the announcement of the standard from some one adequate to the performance thereof. To proceed—

Tons.	Produce.	
107	× 4¾	= 521
97	× 6¾	= 654
92	× 5¼	= 741
68	× 4	= 272
60	× 9¼	= 555
26	× 4¼	= 107
Total tons.. 450	÷	2850, gives 6¼ average produce, discarding fractional remainders.

Then the amount of ore money, viz, 2182*l.* ÷ 450 (total number of tons) gives 4*l.* 17s. (real price) + 2*l.* 15s. (returning charges), makes the nominal price 7*l.* 12s. Then, say, if 6¼ : 7*l.* 12s. :: 100 : 121*l.* 12s., the standard sought.

If any of your correspondents can give me a more easy and expeditious way, through the medium of your paper, they will much oblige

Hewel Suby, Jan. 8. SAUL PININN.

MINING CORRESPONDENCE.

ENGLISH MINES.

HOLMBUSH MINING COMPANY.

Jan. 10.—I beg leave to inform you that the lode in the 110 fathom level west is about ten inches wide, and worth 9*l.* per fathom; in the cross-cut, towards the north lode, the ground continues hard. The lode in the 100 fathom level west is about fourteen inches wide, and worth 16*l.* per fathom; in this level, east of Wall's shaft, no alteration since last reported. The lode in the eastern stopes, in the back of the 100 fathom level, is eighteen inches wide, and worth 35*l.* per fathom. The lode in the western stopes, in the back of ditto, is twenty inches wide, and worth 34*l.* per fathom. In the ninety fathom level west the lode is eighteen inches wide, and worth 20*l.* per fathom; the lode in the eastern stopes, in the back of this level, is about sixteen inches wide, and worth 30*l.* per fathom; the lode in the western stopes, in the back of ditto, is two feet wide, and worth 34*l.* per fathom. In the eighty fathom level, east of Wall's shaft, the lode is sixteen inches wide, producing stones of ore; the lode in the stopes, in the back of this level, is two feet wide, and worth 42*l.* per fathom. In the winze sinking below the ninety fathom level the lode is about one foot wide, and worth 12*l.* per fathom. In the seventy fathom level, on the Flapjack lode, no lode taken down since last reported. The lode in the sixty-two fathom level, east of Wall's shaft, is about one foot wide, producing good stones of ore. The tribute pitches, on the whole, continue to look well. T. RICHARDS.

TRETOIL MINING COMPANY.

Jan. 10.—The lode in the thirty fathom level, east of Williams's shaft, is two and a half feet wide, very good tribute ground for copper; about three fathoms driven last month, much the same. We have just begun to drive east and west on Tregellas's lode, at the thirty fathom level; the lode in the west end is two feet wide, and in the east end three feet wide; each end is producing some good ore. We are driving an end five feet wide in the Mine-park lode, east of Morcom's shaft, at the adit level—it is good tribute ground for tin; four and a half fathoms driven last month, much the same. We are carrying a rise about eight feet wide in the lode in the back of this level—it is very good tribute ground for tin; two fathoms risen last month, which are very good. We have suspended the seventeen fathom level west, not having sufficient air to drive both ends until we hole the rise going up from the thirty-two, or adit level; driven west last month about four fathoms, east three and a half fathoms, all of which are very good tribute ground for tin.

H. WILLIAMS. J. MORCOM.

TREGOLLAN MINING COMPANY.

Jan. 10.—I am glad to be able to inform you that the lode in the forty fathom level east is at present three feet wide (the ores very part), producing black and grey ore, worth 15*l.* per fathom. In extending the cross-cut north, at this level, we have discovered another small branch underlaying north, containing yellow ore, but we have not yet reached either of the lodes in this direction; the ground in the present end is not quite so favourable for driving as it has been. We have nothing new to report respecting the tribute pitches. J. NINNIS.

UNITED HILLS MINING COMPANY.

Jan. 8.—Williams's Engine-shaft—Lode three and a half feet wide, with stones of ore. Sixty Fathom Level, east of Williams's—Lode four feet wide, eighteen inches on the north part ore. Sixty Fathom Level, west of Williams's—Lode four and a half feet wide, ores throughout, but coarse in quality. Fifty Fathom Level, east of ditto—Lode four and a half feet wide, two and a half feet good ore. Fifty Fathom Level, west of Diagonal Shaft—Lode five feet wide, ores throughout. Diagonal Shaft, sinking under ditto—Lode four feet wide, producing a small quantity of ore. Forty-six Fathom Level, east of Turton's Shaft—Lode three and a half feet wide, one foot on the south part ore. Forty-six Fathom Level, west of ditto—Lode four feet wide, poor. Forty Fathom Level, east of Eastern Shaft—Lode two and a half feet wide, producing some ore, with a promising appearance. Winze sinking under ditto—Lode four feet wide, two feet good ore. Cross-cut North of James's Shaft—No lode cut as yet. James's Shaft, sinking under ditto—Lode three feet wide, eighteen inches good ore. Thirty Fathom Level, east of Eastern Shaft—Lode two feet wide, with a small branch of ore on the south part. Twenty Fathom Level, east of ditto—Lode two feet wide, poor at present. N. LANGDON.

REDWOOD CONSOLIDATED MINING COMPANY.

Jan. 10.—In the cross-cut, at the sixty fathom level, the ground is more favourable for driving than I have seen it for some time past; we have driven about fourteen fathoms from the shaft. At the fifty fathom level north, on the lead lode, we are opening good tribute ground; lode about fourteen inches wide, lenty throughout. The rise in the back of this level is progressing favourably; lode about four inches big, yielding a little lead. Driving east on the copper lode, at this level, the ground is moderate for driving, composed of soft spar, white mundic, and stones of ore—a very promising end. Going north, at the forty fathom level, on the lead lode, within the past few days the ground has become much harder than usual, and the lode at present is small and unproductive. The lode in the south end, at this level, is still looking well, and ground favourable. We have an appearance of the lode at Hay Valley. The tribute pitches are looking mostly well.

T. R. ROWE.

GREAT WHEAL CHARLOTTE MINING COMPANY.

Jan. 12.—The lode in the eighty-two fathom level east is about five feet wide, but poor. The lode in the same level west is four feet wide, rather improved since my last report; at present it is worth from 8*l.* to 10*l.* per fathom. The lode in the seventy-two fathom level west still continues to be unproductive. The stopes in the bottom of the seventy-two fathom level west from Batson's winze are yielding five tons of ore per fathom, worth about 4*l.* 10*s.* per ton. Another stope, east of the said winze, is worth 20*l.* per fathom. The eastern stopes, in the bottom of the same level, are worth from 20*l.* to 25*l.* per fathom. The lode in the stopes, in the back of the seventy-two fathom level west from shaft, is worth from 12*l.* to 14*l.* per fathom. The stopes in the bottom of the sixty-two west are worth about 15*l.* per fathom; and the other stopes in the said level east are worth about 10*l.* per fathom. We have this day sampled 114 tons, which is just twenty tons less than the quantity we calculated on, which must be attributed to the severity of the weather. We hope to have an increase in our next sampling to make up for the deficiency. S. TREVETHAN.

TRELEIGH CONSOLS MINING COMPANY.

Jan. 8.—We have now overcome the excess of water and resumed operations in the bottom levels. The seventy west has the appearance of a lode, with stones of ore; this level east is rather hard, and a little altered. The sixty west is improved, the lode four feet wide, and worth 25*l.* per fathom. The fifty west is three feet wide, and worth 35*l.* per fathom. The tributers in the fifty east are doing well. The old sump-shaft is sinking in favourable ground, and in sinking eight or ten feet we shall clear the lode under the slide. At Good Fortune the lode in the shaft and in the forty-four east is unaltered. The forty-four west is large, and worth 12*l.* per fathom.

W. SISCOCK.

TAMAR SILVER-LEAD MINING COMPANY.

Jan. 10.—In the 125 fathom level the ground still continues unfavourable for driving, and the lode at present is small, yet it is not without some ore in it. In the 115 fathom level we are at present driving through ground that is intersected with slide courses, which is unproductive of ore. In the 105 end the lode is eighteen inches wide, producing ores in a soft spar, but not rich. In the ninety-five fathom level the lode is six inches in width—poor. In the eighty-five fathom level the lode is two feet big, carrying branches of ore. In the seventy-five end the lode is somewhat more promising; it is from two to three feet wide, yielding some good work. In the sixty-five fathom level the lode is one foot wide, composed of mundic, soft spar, and a small quantity of ore. In the forty-five fathom level the lode is eighteen inches wide, intersected with rich branches of silver-lead ore. In the twenty-three fathom level, driving north, the lode is small and unproductive. In the tribute department the men continue to work well, and their prospects, on the whole, are favourable. JAMES SPRAGUE.

TINCROFT MINING COMPANY.

Jan. 11.—I beg to say, by way of report, that we have still a large and very promising lode in the new engine-shaft, sinking under the forty fathom level, which appears to be improving as we sink; the shaft is now between two and three feet under the aforesaid level. The forty fathom level east (which is now beyond the cross-cut course) has a very promising appearance; the lode is about twenty inches wide, nine inches on the north part rich copper ore. The lode in same level west is at present in a disordered state, and although not without ore may be considered poor, but I expect it will improve as we get further off from the cross-course. The lode is large in the thirty fathom level west, with stones of ore, but not rich. We continue to work regular at Palmer's, but our progress is slow, the ground being still hard. With respect to the old mine, I am glad to say the water is being drained as deep as the 140, and I expect will be drained to the bottom by Thursday next; our men, both tributers and tutworkmen, are taking their places as the water goes down. There is nothing to report upon below the 120, the end at that level is at present hard and poor, and is likely to continue so for some two or three fathoms, judging from the ground we passed through in the level above. The 110 end east is improving for tin, and very promising; I can speak of an other improvement at present. The winze, sinking under the fifty-eight fathom level, continues to yield excellent tinstuff, worth from 30*l.* to 40*l.* per fathom; I expect this winze will be communicated with the seventy-two in the course of the present month, after which the ground east and west of the winze will let at a low tribute. I beg to refer you to our setting report for the state of our tribute department. W. PAUL.

WEST WHEAL JEWEL MINING ASSOCIATION.

Jan. 10.—The Seventy Cross-cut, south of Buckingham's Engine-shaft—Ground more favourable than last reported. The Seventy East, on the South Branch—Lode not taken down since our last. The Fifty-seven East, on the South Branch—Lode worth 12*l.* per fathom. The fifty-seven east, on Wheal Jewel lode, is worth 15*l.* per fathom. The thirty, west of Hodge's cross-course, on Tolcarne tin lode, is worth 5*l.* per fathom. Our tributers are working vigorously, and we hope they are getting wages. S. LEAN.

MINE ACCIDENTS.

Oswaldtwistle.—On Thursday week, as T. Edleston, a drawer in a coal mine, worked by Messrs. Simpson and Rostron, was being let down by a whimsey into the mine to his work, the rope slipped off about a yard; the basket by that means going down suddenly, shook the deceased out, who fell to the bottom, about twenty-five yards. When taken up he was insensible, and died in about ten minutes. Part of a shield, which was fixed to the whimsey to keep on the rope, had by some means been broken off, which the overlooker had instructed the carpenter to repair, but which he had neglected to do. This seemed to be the cause of the rope slipping, it being wet at the time.

Lochgelly.—On Saturday week a man named Barlas, while employed in sinking a shaft for mining ironstone, was unexpectedly overwhelmed by the falling in of the surrounding mass, and crushed to death on the spot.

Haswell Colliery.—As W. Miller was assisting at Haswell Colliery to fix on a new rope, he unfortunately fell from the loup down the shaft, 150 fathoms, and was dashed to pieces.

PROCEEDINGS OF PUBLIC COMPANIES.

MINING COMPANY OF IRELAND.

The half-yearly meeting of the above company was held at the company's office, Lower Ormond-quay, Dublin, on Thursday, the 6th inst.

ISAAC ENGLISH, Esq., in the chair.

Mr. RICHARD PURDY (the secretary) read the requisition convening the meeting, the minutes of the last day's proceedings, and the following report of the directors to the shareholders to 1st December:—

REPORT.

The returns from the company's works in the past half-year are equal to your board's expectation, yielding profit amounting to 18,760*l.* 1*s.* 11*d.* Of the profit thus realised, there has been expended in improvements for the further extension of the company's works, principally at the Knockmahon Copper Mines and the Silvergadagh Collieries, the sum of 5447*l.* 11*s.* 11*d.*, which leaves a net available surplus amounting to 13,304*l.* 10*s.* in the half-year. The company's floating capital consists of cash and bills, 10,986*l.* 14*s.* 1*d.*; debts, 8696*l.* 16*s.*; mortgage, 11,799*l.* 17*s.* 11*d.*; mining materials and advances for various purposes, to be accounted for, 5444*l.* 9*s.* 6*d.*; and mineral produce, 30,186*l.* 2*s.* 10*d.*—in all, 66,725*l.* 6*d.*, whilst the only debts due by the company consist of accruing rents for the current half-year. The produce obtained from the Knockmahon Copper Mines is 3201 tons, yielding profit amounting to 5439*l.* 2*s.* 10*d.*, and the present prospects in the several sections of these mines are considered to be satisfactory. Your profit from the Silvergadagh Collieries amounts to 1903*l.* 15*s.* 7*d.*; the large stock of coal and culm (16,481 tons) being valued at a reduced rate, upon which some improvement may be expected. The lead works at Ballycorus have yielded 810*l.* 17*s.* 7*d.*, as profit upon the manufacture. From Lugnacurr Lead Mines there has been obtained 350 tons of ore, the profit from which is 1102*l.* 7*s.* 6*d.*, and the prospects continue favourable. The Calone and Ballyhelland Mine has been worked with trifling profit; the quantity of ore obtained is 222 tons, the profit upon which has been nearly expended in searches for the great lode, at the forty seven fathom level, where it has been only recently found. It is upwards of twelve feet wide, and is yielding three tons of ore per fathom, and at other parts of the mine the prospects are satisfactory. The Silver Mines great lode, or Sulphur Ramp, has been cut in the deep adit, but the level has not been extended through, although driven thirty feet into it; from which it may be inferred that the vein is of unusually large dimensions, and, considering the great extent of the old workings, which indicates the former productiveness of the mine near the surface, it appears desirable to prove the bearing ground at the deep level, at which it has been unwatered by means of the adit driven by the company. Referring to the former report on the Armagh mining district, your board has only to state, that it has been considered desirable to suspend the trials in progress and withdraw from the district; and, with that view, the company's interests there have been advertised for sale, and the machinery and other materials are in progress of removal. The annuities receivable from Lord Audley's estate have been paid to the company's treasurer by the receiver, pursuant to the order of the Master of the Rolls. The lamented death of one of the company's auditors (Mr. Jonathan Pim), who had with zeal and ability officiated in that capacity from the date of the company's formation, and the retirement of another (Mr. Rose), induced your board, in the absence of any provision in the Deed of Association for such events, to request two respected proprietors (Mr. Rosse and Mr. Hopkins) to assist in auditing the accounts now submitted, with which request their have kindly complied. From the foregoing report of the company's affairs, it will appear evident that the interests committed to the care of your board have not participated of the depression which has for some time pervaded other branches of trade, but, on the contrary, your increased profit fully warrants your board in recommending that a dividend may be declared for the past half year, at the rate of 15 per cent. per annum, payable on and after the 1st day of February next.

Mr. PURDY then read an abstract of the accounts, when Mr. GIBBON begged to ask, what had become of the vessels purchased by the company?—Mr. PURDY said they formed part of the assets.

Dr. BARRON proposed a resolution to the effect, "That the report now read, with an abstract of the accounts, be received and entered, and that 500 copies of same be printed and distributed to the shareholders."

Mr. GIBBON had not been present at the company's meetings for some time, and, therefore, he would take the liberty of trespassing on the patience of the meeting for a short period. He thought the dividends and profits of the company should be kept under separate heads, in order to see if the dividends were paid out of the net profits or not.—The CHAIRMAN said they were under separate heads, and that every satisfaction could be given on that point.—Mr. GIBBON said he must protest against having the profits merged into the accounts; it appeared the company was never in a more prosperous state than at present, and the proprietors ought to get the benefit of that. At the close of 1839 it was resolved to apply the profits of the company in exploring new improvements, and he called the attention of the meeting to those facts, because, when landlords and proprietors of property in which the company had invested their capital, found them paying 15 per cent., and the shares costing only 11*l.*, they (the landlords) would demand a higher rate of rent, &c.; and what he wanted was to separate the dividend account from the accounts of profits belonging to the company. He saw a sum of 1139*l.* 2*s.* 9*d.* charged as paid on the Audley royalties, and this sum was paid with the idea of recovering half of them to the company.—Mr. PURDY said that the proceedings alluded to were instituted in order to recover the amount from Lord Audley on a mortgage due to the company on as good property as any in Ireland, and that more than one-half of the costs would revert to the company.—Mr. TILLY said the proceedings were instituted for the above purpose; but, in consequence of the persons coming in with a decree, the company had stayed the proceedings, as they could come in under that decree against the property, and therefore would be saved considerable additional expense on this point.

Mr. GIBBON thought the purchasing of ships by the company a very unprofitable speculation, because, after landing their cargoes at the other side, the ships would be obliged to take freight to some other port, or, failing in procuring that, they would be obliged to ship coal, and thereby turn the company into a coal company; they could procure ships in the winter to take ore at 11*s.* per ton, and at 5*s.* in the summer, so that it was not worth while to purchase ships.—Mr. Ald. O'NEILL said this piece of speculation was the very best ever entered on by the company, Mr. Gibbon did not understand this, for there was a frightful combination entered into against the company not to carry this ore, and men possessing what is termed character had entered into this combination; they rose the freight to 20*s.*, 22*s.*, and even 24*s.* a ton, and when the company saw this they purchased two vessels, which originally cost 1500*l.*, for 530*l.*, and the consequence was, that the moment the combinators saw this they almost went on their knees to the company, and offered to take the ore at the old prices, so that more than the price of the vessels purchased was now saved by the proceeding.

After some discussion, in which Messrs. Gibbon, Mooney, Purry, &c., took part, the resolution of Dr. Barker passed unanimously.

A DIRECTOR moved that a dividend of 15*l.* per cent. per annum be paid to the proprietors on the 1st of February.—The resolution was seconded by Mr. GIBBON, jun., and passed unanimously.

Mr. DAWSON moved that John Ennis and William Hopkins, Esqrs., be appointed auditors for the ensuing year.—This was also passed unanimously, and the meeting separated.

LONDON JOINT-STOCK BANK.

The half-yearly general meeting of the shareholders of this company took place at the offices, in Princes-street, Bank, on Wednesday, the 12th inst., and was well attended. From the report it appeared that the paid-up capital now is 549,700*l.*, and that the directors have thought it advisable to complete the issue of the whole 60,000 shares, the remaining 1030 of which were to be sold in the market. The accounts showed a net profit on the half-year, ending the 31st of December, of 35,923*l.* 14*s.* 3*d.*, from which a dividend for the half-year, after the rate of 6*l.* per cent. per annum, was recommended, which would amount to 17,691*l.*—leaving 8232*l.* 14*s.* 3*d.* to be carried to the profit of the guarantee fund, which now amounts to 81,731*l.* 1*s.* 8*d.* The report was adopted, and the four directors, who retired, were re-elected, and John Timothy Oxley, Esq. (recommended by the directors) was elected a director in the place of Sir Francis Palgrave, resigned.

BRITISH COLONIAL BANK AND LOAN COMPANY.

A special meeting of the shareholders of this company, whose operations appear to be most particularly directed to the Australian colonies, was held on Wednesday, the 12th inst., for the purpose of submitting to the shareholders a statement of their affairs, and was more anxiously looked forward to, as it was naturally supposed the question would be agitated of the influx of scrip certificates of the company from Sydney, &c., as remittances by merchants and others to their connections here, which has ended in the disappointment of so many persons, as the certificates have been unable to command a price in the London money market, although the representations in the colony were that they would be negotiable at a premium. The affairs of the company, considered in a pecuniary point of view, are not in a favourable position; for, in the first place, they commenced business with a limited capital, and in the next, the great falling off in the payment of the respective calls upon the shares restricted their means. It was evidently the desire of the major part of the shareholders who assembled, finding how matters stood to wind up the concern with as little delay as possible. The representatives of the holders of the certificates were much inclined to lean with favour to the company, though not in the least showing a desire to abandon their claim to a redemption at par, declaring that they should hold themselves bound to institute such proceedings as would open a course for the decision of the question between them and the company, in the event of a refusal of the recognition of their claims. That there would be no necessity to do this, one of the chief representatives of these holders thought would be evident from what he had heard stated—viz., that if the directors of this company thought proper, they might relieve the shareholders and themselves from the responsibilities which they feared were hanging over them, by a junction or merging of their interests in the Australian Trust Company, which company, it was stated, would, at all events, be ready to receive proposals on that subject. For the directors, it was said that there was every disposition to listen, should the meeting think fit, to the claims brought forward by the holders of certificates; but in dealing with these it must be recollected that there were more classes than one, for as in some instances the remitters had procured the certificates from the recognised officers of the company, in many others they had been purchased in the Sydney market without any connection with the company, but as a security negotiable out there. They were willing, if the shareholders considered it right, to attempt the practicability of a merging of their interests on equitable terms to the Australian Trust Company, but strongly impressed on the minds of the shareholders the necessity of placing them, by payment of the arrears of calls, in such a position as to go to that company with strength, and not as mere suitors. They were willing, too, that a deputation of three directors should meet a deputation of three representatives of colonial scripholders, and enter into an investigation of that matter, with a view to the equitable settlement of those claims, desiring as they did to do justice to all parties. This was readily conceded to on the part of the shareholders, who, stating that they had all confidence in the directors, passed resolutions to that effect, and an adjournment was made for the purpose of an early meeting, when these matters shall have been considered.

BOROUGH OF MARYLEBONE BANK.

At an adjourned meeting of the shareholders of the above bank held on Tuesday, the 11th inst. (Mr. PARNELL in the chair), after receiving some information from Mr. Aitchsone (the chairman of the committee), in which he stated that Mr. Hanaay's efforts would yield 20*s.* in the pound, resolutions were carried unanimously, agreeing that the trustees of the defence committee—viz., Messrs. Dunkes, Robinson, Jackson, and James Christmas (in the room of Mr. Beaty), together with Mr. Parnell, the chairman (to countersign the drafts), be the trustees now appointed, and in whose names the moneys to be received by Sir Claude Scott and Co., for the purposes mentioned in the resolutions of the 21st of December, should be placed, the same when so placed to be subject to the usual restrictions as those mentioned in the resolutions of the defence committee—viz., that none shall be drawn out unless the accounts upon which any payment was to be made were submitted to the whole body of the proprietors who had subscribed to the fund, of whom nine were to constitute a quorum; the checks to be signed by the three gentlemen now named as trustees, and countersigned by their chairman (Mr. Parnell); the whole body of the proprietors to be summoned to attend to give their sanction to the appropriation of any part of the funds, and when any financial question was to be discussed at any meeting hereafter to be called, it was to be distinctly stated in the summons; a week's notice to be given previous to the day of the intended meeting in every case.—After some discussion, the time for paying the subscription was decided should be limited to twenty-one days.—Mr. ABRAHAMS then moved, and Mr. LEGG seconded, a resolution requiring the committee of investigation to insist upon a public meeting being called by the directors of the Marylebone Bank, for the purpose of enabling the committee appointed on the 16th of August last to make their report of the affairs of the bank, so far as they are enabled to state the same, in conformity with the resolutions of that day, which was unanimously agreed to, and thanks having been voted to the chairman and the press, the meeting adjourned to the 25th of February.

MONEY MARKET AND CITY NEWS.

CURRENT PRICES OF ENGLISH AND FOREIGN FUNDS.

Consols Money, 89 ⅛
Ditto Account, 89¼ ⅜
New 3½ per Cents., 99⅞ 9
Reduced 3 per Cents., 89⅛ ¼
Reduced 3½ per Cents., 99 ¼
Long Annuities, 12⅛
Bank Stock, 166 7
Exchequer Bills, 14 16 pm.
Belgian Bonds, 5 per Cent., 101 2
Brazil, 5 per Cent., 64 5
Danish, 3 per Cent., 81 ⅜
Dutch, 2½ per Cent., 51 ⅛
Ditto, 5 per Cent., 100⅞ ⅛
Portuguese, 5 per Cent., 33 ¼
Ditto, 3 per Cent., 19 ⅛
Russian, 5 per Cent., 114½
Spanish, Actives, 5 per Cent., 24⅝ ⅞
Chili, 6 per Cent., 69 71
Colombian, 6 per Cent., 21½ 2
Mexican, 5 per Cent., 29 ⅛

REMARKS ON THE OPERATIONS OF THE WEEK.

SATURDAY, Jan. 8.—The public funds were steady throughout the day, the only alteration being a rise in the value of Exchequer Bills, which left off at 20s. to 22s. pm.; Consols closed, for Money and the Account, 89⅛ to ¼; 3 per Cents. Reduced, 89⅞; India Bonds, 9s. to 10s. pm.; Bank Stock, 167 to 8.—Very few bargains were done in foreign securities, and those at rather lower prices. Spanish Actives left off at 25⅛ to ¼; Colombian, 22¼ to ½; Brazilian, 65 to 6; and Belgian, 101 to 2.—The share market was heavy, and but little business transacted; Great Western, new, 61; Brighton, 38½; Blackwall, 11⅞; South-Western, 58½; and South-Eastern and Dover, 22.—Cobre Copper Mining Company, 35½.—London Joint-Stock Bank, new, 12½.

MONDAY.—The English money market experienced greater fluctuations to-day than has occurred for some time past; Consols opened at 89⅛ to ¼, but almost immediately receded to 88⅞, being a fall of ⅝ per cent. since Saturday morning; the depression was occasioned from large sales of stock (150 or 200,000l.) being effected by the Government broker, to supply the deficiency in the late funding; however on some purchases being subsequently made, the market rallied, and, at the close of business, the quotation was 89⅛, both for money and the account. Some considerable sales were also made in Exchequer Bills, which had the effect of reducing them from 22s. to 18s. pm., but they afterwards got up to 20s., at which price they closed.—Business in the foreign stocks was limited, and almost confined to Spanish, which was affected by the disturbed state of the English market; they, however, recovered, and closed the same as yesterday.—The share market was steady; some Great Westerns were done a trifle higher, but, with this exception, no material alteration took place in prices.—Cobre Copper Mining Company, 35; Real del Monte, unregistered, 3.—Australasian Bank, 35½.

TUESDAY.—The operations in the English funds, on the part of the Government broker, were continued to-day, and sales made to a considerable extent, which, of course, caused money to be scarce and prices flat; in the early part of the day money was to be had for 3 per cent., but towards the close 5 per cent. was the current price. Consols were unfavourably affected to the extent of ⅜ per cent., the closing price being 88⅞ to 9; the unfunded debt was also unfavourably influenced, Exchequer Bills having receded to 18s. to 20s. pm.; Bank Stock, 166½ to 7½; India Stock, 246 to 7; India Bonds, 9s. to 11s. pm.—The foreign market continues in a state of inactivity; few transactions were done, and prices continue without alteration.—In shares a slight decline took place in Great Westerns, and a trifling advance in Blackwalls and Brightons; the market, in general, had a flat and declining appearance.—Cobre Copper Mining Company, 35; Real del Monte, unregistered, 3.—Australasian Bank, new, 13; Union of London, 9⅞ to ⅛.

The rates of exchange on most continental places to-day were higher, in consequence of the supply of bills having exceeded the demand. Amsterdam, short, were quoted 12 3 to ¼; Rotterdam, three months, 12 5; Hamburgh, 13 10½ to 11; and Paris, short, 25 42½ to 57½.

The premium on gold at Paris is 7 per mille, which, at the English Mint price of 3l. 17s. 10½d. per ounce for standard gold, gives an exchange of 25. 32, and the exchange at Paris on London at short being 25. 45, it follows that gold is 0·51 per cent. dearer in London than in Paris.

By advices from Hamburgh the price of gold is 429 per mark, which, at the English Mint price of 3l. 17s. 10½d. per ounce for standard gold, gives an exchange of 13. 6¾, and the exchange at Hamburgh on London at short being 13. 9¼, it follows that gold is 0·80 per cent. dearer in London than in Hamburgh.

WEDNESDAY.—The English securities were still further depressed by the continued operations of the Government broker, who, it is said, sold about 300,000l. Consols for Bank notes; these sales, however, did not have a very stringent effect upon the market, as cash was much more plentiful, the rates for the ordinary periods of accommodation having lowered to 4 per cent.; there were no other large transactions, but the Chancery broker was a small buyer in the course of the day. Consols for Money and Account closed at 88⅞ to 9; India Stock, 245 to 7; and Exchequer Bills, 17s. to 19s. pm.—The heaviness in the English funds had an unfavourable influence on foreign stocks, most of which were lower.—The share market was steady, with a moderate amount of business doing, but no alteration took place in prices.—Colonial Bank, 29 ex div.

THURSDAY.—The Government broker continued his sales of stock, for account of the Treasury, to-day, to the extent of about 200,000l. Consols; the rate accepted was 88⅝, but the market being firm, and cash plentiful, the effect of the operations was but temporary, and before the termination of business prices recovered to 88⅞ to 9; the market closed steady, and the arrangement for the settlement progresses satisfactorily; money was worth 3½ to 4 per cent. Bank Stock was last quoted 166½ to 167½; India Stock, 246 to 247; Exchequer Bills, 16s. to 18s. pm.; Three per Cents. Reduced, 89⅜; and India Bonds, 9s. to 11s.—The foreign funds did not present any feature of novelty, the transactions being limited, and at former quotations.—The business in the share market was confined principally to Great Westerns and Brightons—the former fluctuated between 60⅞ and 60⅝, at which price they closed; the latter were done at 37½ to 7⅞, and closed at 37⅝—other lines continued the same.—Bolanos scrip, 4½; Real del Monte, unregistered, 3.—Colonial Bank, 29⅞ ex div.; National Bank of England, new, 9¾.

Accounts from Rio Janeiro, of the 20th of October, quote the Exchange upon London 31½ to ¾, and the price of the 6 per cent. stock 73.

FRIDAY.—The market having been undisturbed by the Government broker, together with the easy settlement of the account, contributed much to give the national securities a healthier appearance; the fluctuations in Consols ranged between 89⅛ and 9¼, at which they closed; Exchequer Bills, 15s. to 17s. pm.; and India Bonds, 9s. to 11s. pm.—But little business was transacted in the foreign funds, which were flat, particularly Spanish, which suffered a decline, in consequence of unfavourable news, the Actives closed at 24⅝ to ⅞.—In the share market an improvement took place in Brightons, which were done at 37⅞ to ⅛ per share; Blackwalls were rather lower; no alteration in other lines.—Colonial Bank, 29 ex div.; London Joint-Stock, 12½; and Union of Australia, new, 24.

The foreign exchanges were not altered to-day, Paris, short, being quoted 25 42½ to 67½; Antwerp, 12 4¾; Amsterdam, 12 3¾; Rotterdam, 12 5; and Hamburgh, 13 10½ to 11.

[From our own correspondents.]

LATEST PRICES OF IRISH STOCKS.—3 per Cent. Consols, 89—3½ Stock, 99⅞—Ditto New, 1840, 99—3½ per Cent. Debentures, 91¾—Bank Stock, 172—Kingstown Railway, 61—Hibernian, 10—National Insurance Company, 20—City of Dublin Steam Company, 112—ditto Stock, 1840, 54—British and Irish Steam Company, 35—Hibernian Bank, 30¾—Royal Bank, 1[illegible]—Mining Company of Ireland, 13—Wicklow Copper Mines, 13¾.

AMSTERDAM, Jan. 11.—Actual Debt, 2½ per Cents., 51¾ to ⅞; 5 per Cents., 99¾ to 100; Amort Synd., 4½ per Cents., 91 to 91¼; ditto, 3½ per Cents., 76 to 76¼; Commercial Company, 4½ per Cents., 153 to ¼; Loan, 1842, 5 per Cents., 97⅞ to 8. Exchange on London, 11 12; two months, 11; ditto on Hamburgh, 35 60 7-16; two months, 35 41 7-16.

BRUSSELS, Jan. 7.—Actual Debt, 2½ per Cents., 52⅜; Rothschild's Loan, 101⅞; Loan, 30,000,000, 97¼; ditto, 32,000,000, 71¾; ditto, 1842, 101⅛; Bank of Belgium, 73⅛.

HAMBURGH, Jan. 8.—Austrian 5 per Cents., 107⅛ bills, 107⅛ money; Bank Shares, 1440 money; Russian English Loan, 112⅛ bills, 112⅛ money; 1st Series Inscriptions, 103¼ bills; Hope and Co., 3d and 4th Series, 98 money; ditto, in Certificates, 99 money; New 4 per Cents., 1840, 88⅞ bills, 88⅜ money; Dutch Actual Debt, 2½ per Cents., 101 5/16, 50⅞ money; Polish Bonds, 135 bills, 134⅛ money; New Tickets, 101 bills, 104⅞ money; Danish English Loan, 3 per Cents., 76⅞ bills, 76 money. Exchanges on London—Riga, Jan. 1, three months, 38⅞; St. Petersburgh, Dec. 28, three months, 38⅞; Bremen, Jan. 4, two months, 613.

PARIS, Jan. 11.—5 per Cents., 117f. 70c.; 4 per Cents., 102f. 50c.; 3 per Cents., 78f. 0c.; Loan, 1841, 79f. 5 c.; Bank Actions, 3250f.; Rente de Naples, 107f. 50c.; Romans, 104; Spanish Actives, 26¾; ditto Passives, 5¾; Belgian 5 per Cents., 1840, 105⅛; ditto, 1842, 104½; ditto 3 per Cents., 71f. 75c.; Belgian Bank, 802f. 50c.; Portuguese 5 per Cents., 35½; Haytian Loan, 580—Versailles Railway, R. B., 320; L. B., 210; Rouen, 510; Orleans, 510; St. Germain to Rouen, 1290f. 50c. Exchange on London, one month, money, 25f. 37½c.; three months, money, 25f. 17½c.

VIENNA, Jan. 4.—5 per Cents., 106¾; 4 per Cents., 99⅝; Bank Shares, 1625.

EDINBURGH, Wednesday.—Edinburgh and Glasgow Railway, 47l.; Dalkeith and Edinburgh, 3[illegible]l.; Glasgow and Greenock, 18l.; Glasgow and Garnkirk, 90l.; Glasgow and Ayrshire, 50l.; Wishaw and Coltness, 40l.; Dundee and Arbroath, 19l.; Arbroath and Forfar, 25l.

HULL, Thursday.—[illegible]

NEWCASTLE, Thursday.—[illegible]

MANCHESTER, Thursday.—[illegible]

LIVERPOOL, Thursday.—Grand Junction Railway, 184l.; Lancaster and Preston, 27l.; Liverpool and Manchester, 160l.; North Union, 77½l.; Paris and Rouen, 13½l.; York and North Midland, 92l.—Albion Bank, 23l.; Borough, 13½l. ex div.; Bank of Liverpool, 19l.; Liverpool Banking Company, 7¾l.; Manchester and Liverpool District, 10½l.; Royal, 60l.; South Lancashire, 5l.; Union, 10½l.

BIRMINGHAM, Thursday.—London and Birmingham Railway, 184l. to 189l.; Great Western, 87l. to 88l.; London and South-Western, 58l. to 59l.; London and Brighton, 37½l. to 37¾l.; Birmingham and Derby, 55l. to 57l.; Birmingham and Gloucester, 62l. to 63l.—Birmingham Banking Company, 29½l. to 30½l.

BRISTOL, Friday.—Our market continues dull and inactive, and prices lower than my last.—Great Western Railway, 86l. to 87l.; halves, 64l. to 64½l.; fifths 19½l. to 16l.; Bristol and Exeter, 25l.; Bristol and Gloucester, 5l.; Birmingham and Gloucester, 63l. to 65l.; Cheltenham Union, 7½l. to 18½l.; Taff Vale, 65l. to 70l.—Bristol Gas Company, 32l.; Clifton, 23l. to 24l.

SALE OF COPPER ORES IN CORNWALL.

Sampled Dec. 29, and sold at Andrew's Hotel, Redruth, Jan. 13.

Mines.	Tons.	Price.	Purchasers.	Mines.	Tons.	Price.	Purchasers.
Treweavas	109	£5 9 6	Vivians.	St. Andrew	27	£4 2 0	Vivians.
ditto	101	4 2 6	——	ditto	27	4 2 0	Freemans.
ditto	91	4 7 0	——	ditto	51	2 6 6	Vivians.
ditto	70	5 10 0	Williams.	ditto	16	4 10 6	P. Grenfells.
ditto	61	6 18 6	Nevill & Co.	ditto	16	4 10 6	Williams.
Fowey C.	83	6 6 6	Williams.	Wh. Buller	61	5 6 6	Freemans.
ditto	75	6 6 6	Freemans.	ditto	76	6 5 6	——
ditto	74	5 5 0	Williams.	Providence	73	4 6 6	Williams.
Friendship	75	4 14 0	Nevill & Co.	ditto	60	5 11 0	Vivians.
ditto	49	5 0 0	Williams.	Wh. Speed	60	4 10 0	Williams.
ditto	25	2 12 6	Freemans.	ditto	22	3 10 0	——
Wh. Prosper	41	9 3 0	Nevill & Co.	Relistian	13½	6 8 0	Freemans.
ditto	40	2 6 6	Vivians.	ditto	13½	6 8 0	Williams.
Levant	73	16 11 6	——	ditto	6	9 6 0	——
ditto	60	9 0 6	Williams.	Wh. Busy	35	4 0 6	——
ditto	53	7 10 6	Freemans.	Botallack	15½	16 5 0	Freemans.
ditto	24	6 1 0	——	ditto	15½	16 5 0	Vivians.
St. Andrew	57	5 12 6	——	Grambler	6	5 6 0	Williams.

TOTAL PRODUCE.

Mines	Tons	Amount	Mines	Tons	Amount
Treweavas	451	£2329 15 0	Providence Mines	133	£640 14 6
Fowey Consols	232	1518 11 6	Wh. Speed	82	355 0 6
Wh. Friendship } Wh. Prosper }	229	1085 5 6	Relistian	45	305 8 0
Levant	230	1930 4 0	Wh. Busy	35	140 17 6
Wh. St. Andrew	191	818 4 0	Botallack	31	503 15 0
Wh. Buller	137	919 13 6	Grambler	6	31 16 0

Average standard, 125l. 5s.—Average produce, 7.—Average price, 6l. 0s. 6d.—Quantity of ore, 1795 tons.—Quantity of fine copper, 125 tons 13 cwt.—Amount of money, 10,860l. 4s. 6d.—Average standard of last sale, 125l. 0s.—Average produce, 7¼.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Vivian and Sons	560½	£2401 19 0
Freeman and Co.	465	2648 19 6
P. Grenfell and Sons	16	74 16 0
Sims, Willyams, Neville, Druce, and Co.	177	1160 1 6
Williams, Foster, and Co.	572½	3167 17 6
Total	1795	£11,866 4 6

Copper ores for sale on Thursday next, at Pearce's Hotel, Truro.—Mines and Parcels.—Tresavean, 630; Wheal Jewel, 480; Poldice, 458; Fowey Consols, 243; Holmbush, 214; Wheal Maiden, 63; Tregollan, 31; Wheal Kitty, 31; Wh. Damsel, 8.—Total, 2170 tons.

Copper ores for sale on Thursday week, at Pearce's Hotel, Truro.—Mines and Parcels.—Consols Mines, 966; Tresavean, 442; United Mines, 480; Trethellan, 388; Hallenbeagle, 300; Fowey Consols, 237; Wheal Unity Wood and Union, 190; Wheal Ellen, 174; Great Wheal Charlotte, 114; Tregothnan Consols, 73; Wheal Tehidy, 31; Perran Mines, 30; Bolenna, 26.—Total, 3433 tons.

SALE OF COPPER ORES AT SWANSEA.

Sampled Dec. 22, and sold on the 13th January.

Mines	Tons	Produce	Stand.	Price	Mines	Tons	Produce	Stand.	Price
Cobre	110	13¾	10[illegible]	11 10 6	Cobre	42	21½	99¼	18 17 6
ditto	179	13¾	100½	11 7 0	ditto	70	21½	100	19 4 6
ditto	67	13½	100½	11 11 0	ditto	60	21½	100	19 5 6
ditto	49	22¼	99	19 13 0	ditto	60	22	99½	19 14 0
ditto	99	13¾	113	11 13 0	ditto	41	22¼	97½	19 18 6
ditto	103	14	102¼	12 1 0	Chili	100	19½	100½	17 2 6
ditto	100	14	102	12 0 0	ditto	90	18½	100	16 15 0
ditto	180	14	102¼	12 1 0	ditto	90	18½	100	16 7 6
ditto	52	22¼	99	19 12 0	Allihies	99	10½	117½	9 10 6
ditto	50	12¾	102½	10 14 6	ditto	71	9½	120	9 9 0
ditto	99	13½	104	10 12 6	Lackamore	62	9½	123	8 13 6
ditto	98	12½	104½	10 15 6	Copiapo	30	34	97	30 16 0
ditto	62	12½	103½	11 1 0	Tigroney	20	9	122½	8 15 0
ditto	97	20½	99½	18 0 0	Cronebane	20	8	120½	7 12 0
ditto	56	20½	99½	18 3 0	Gloucestershire	10	11	113½	10 5 0
ditto	52	20½	100	18 0 0					

TOTAL PRODUCE.

Mines	Tons	Amount	Mines	Tons	Amount
Cobre	1561	£22,318 10 6	Copiapo	30	£1174 4 0
Chili	280	4795 0 0	Tigroney	20	175 0 0
Allihies	180	1349 15 0	Cronebane	15	75 0 0
Lackamore	68	585 10 0	Gloucestershire	10	102 10 0

Total tons, 2184.—Total amount, £30,710 3 6.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
English Copper Company	432	£4712 3 6
Freeman and Co.	49	590 18 0
Grenfell and Sons	349	5090 1 0
Sims, Willyams, Neville, Druce, and Co.	33½	2967 11 6
Vivian and Sons	653	8121 16 6
Williams, Foster, and Co.	547½	9092 0 0
Mines Royal Company	98	926 13 0
Total	2151	£30,710 3 6

Copper ores for sale January 26.—Cobre 106, ditto 95, ditto 80, ditto 61, ditto 56, ditto 79, ditto 71, ditto 7—Knockmahon 126, ditto 119, ditto 72, ditto 37, ditto 34—Allihies 118, ditto 117, ditto 102, ditto 72—Copiapo 180, ditto 100, ditto 92—Santiago 79, ditto 76, ditto 37, ditto 33—Phoenix 41—Llwydd 22, ditto 10—Connoree 12, ditto 12—Chili 66, ditto 48—Phoenix 30.—Total, 2180 tons.

SALE OF BLACK TIN,

By Ticket, on the 11th of January, at Penzance.

Mines.	Tons.	Price.	Amount.	Purchasers.
Balleswidden	5¾	£45 7 6	£261 10 9	Williams and Co.
ditto	5¾	45 7 6	261 10 9	Bolithos and Co.
ditto	9	45 10 0	475 10 0	ditto.
ditto	9	45 10 0	409 0 0	Williams and Co.
ditto	¾	45 12 6	33 14 4½	L.C.&W. Daniell.
ditto	¾	45 12 6	33 14 4½	Williams and Co.

Total tons, 31¼.—Amount, £1306 10s. 3d.

Particulars of copper ores sold in Cornwall, in the quarter ending December 31.—Copper ores, 31,810 [illegible] cwts.—Fine Copper, 2087 tons 15 cwts.—Amount of money, 200,777l. 11s. 0d.—Average standard, 127l. 1s.—Average produce, 7¼.—Average price per 21 cwt., 6l. 9s. 0d.

CORNISH STEAM ENGINES.—Marazion, January 13.—The number of pumping engines reported this month is forty-five. They have consumed 4258 tons of coal, and lifted 47,000,000 tons of water 10 fathoms high. The average duty of the whole is, therefore, 54,000,000 lbs. lifted one foot high by the consumption of a bushel of coal.
THOS. LEAN & BROTHER.

PRICES OF MATERIALS IN CORNWALL

AS SUPPLIED AT THE PRINCIPAL MINES IN THE FOLLOWING MONTHS.

[illegible]

METEOROLOGICAL JOURNAL, 1841.

[illegible]

LATEST CURRENT PRICES OF METALS.

LONDON, JANUARY 14, 1842.

		£	s.	d.
Iron, Eng.—Bar	ton 0 0 0 to	7	0	0
Do. Carg. in Wales		6	5	0
Hoops	ton	9	0	0
Sheets	ton	10	0	0
Pig, No. 1	ton	5	0	0
Do. in Wales		4	0	0
Foreign—Duty 30s. per ton.—Swedes, cs. bd.	ton	13	10	0
Russian com.	ton	14	10	0
P.S.I.	ton	15	10	0
C.C.N.D.	ton	15	10	0
Steel, Eng. Blistered, 25 0 0 to		45	0	0
Shear do. do. 45 0 0		64	0	0
Cast do. do. 45 0 0		64	0	0
Foreign—Duty 20 per cent.—Sweden in kgs bd.	ton	19	10	0
Do. Faggots bd.	ton	20	10	0
Milan bd.	ton	0	0	0
Copper, Brit.—Cake	ton	96	0	0
Tile	do.	96	0	0
Sheets	lb.	0	0	11¼
Copper—Foreign (dy. 27s.)		—		
Tin, Brit.—Blocks	cwt	3	16	0
Bars	do.	4	0	0
Banca 0 0 0 to		3	13	0
Straits 0 0 0 to		3	10	0
Tin Plates—I.C. (box) 1 10 0 to		1	12	0
I.X. do. 1 16 0 to		1	18	0
(Others in proportion.)				
Lead, Brit.—Pig	ton	[illegible]		0
Sheet	ton	[illegible]		0
Shot	ton	22	0	0
Red	ton	21	0	0
White (dry)	ton	26	0	0
Do. (gd. in oil)	ton	24l. a 2[illegible]		
Foreign—Span. (dy. 40s.)		20	0	0
Spelter 0 0 0 to		20	0	0
For delivery 0 0 0 to		20	0	0
English Sheets 47l. to		43	0	0
Quicksilver—(dy. 1d. per lb.)		0	4	0

EXPORTATION OF GOLD AND SILVER.—By the official return published by the Customs, the export of the precious metals from the port of London to foreign and colonial ports, for the week ending Thursday last, was as under:—
Silver coin to Hamburgh ... 35,500 ounces.
" Rotterdam ... 2,000 "
Silver bars to Hamburgh ... 26,000 "

COAL MARKET, LONDON.

MONDAY.—Price of coals per ton at the close of the market:—Buddle's West Hartley 17 6—Taylor's Hartley 17—West Hartley 16—Wylam 16 6—Wall's End Clennell 17—Newmarch 16—Russell's Hetton 22 9—Stewart's 23—Tennant's Hartlepool 21 6—Blyth 15 6—Cowpen 17.—Ships arrived, 8.

WEDNESDAY.—Holywell Main 17—Original Windsor's Pontop 17 3—W. Hartley 16—Wall's End Bewick and Co. 21 6—Brown's 16—Hedley 19 6—Hilda 19 6—Killingworth 19—Hetton 22—Lambton 21 9—Shincliffe 21 9—Cassop 22 3—Barrington Tees 17—Evenwood 16—Blyth 15 6—Cowpen 17 6.—Ships arrived, 6.

FRIDAY.—Holywell Main 17—Original Windsor's Pontop 17 3—Townley 15 6—Wall's End Hedley 19 6—Hilda 18—Hotspur 17 6—Northumberland 17 9—Braddyll's Hetton 22—Hetton 21 9—Lambton 21 9—Russell's Hetton 21 9—Stewart's 22 3—Caradoc 22 3—Cassop 22 3—Kelloe 22—Adelaide 21 6—Blythe 15 6.—Ships arrived, 3.

PRICES OF MINING SHARES.

Shares.	BRITISH MINES.	Paid.	Price
500	Anglesey	5	—
4,000	Bissoe Bridge	5	1½
20,000	British Iron	60	6 dis
6,000	Blaenavon	40	20
129	Brewer	—	100
79	Budnick	—	100
1,000	Carn Brea	—	120
100	Copper Bottom	41	20
2,000	Cornubian Lead Co.	2	2
6,000	Cornwall Great United	10½	1
	Cuddra	10	¼
512	Cook's Kitchen	—	50
112	Charlestown	—	700
5,000	Dartmoor Consols	5	1½
10,000	Durham County Coal Co.	37	9
2,000	Danescombe	—	2
6,000	De Dunstanville	—	—
1,000	Duffield	50	11
1,200	East Mulberry Hills	3½	1
256	East Pool	—	420
4,000	East Tretoil	1	⅛
3,300	Great Wh. Prosper	7½	6½
4,000	Great Wh. Charlotte	3	1½
10,000	Hibernian	12½	3½
1,000	Holmbush	14	40
2,000	Isle of Sark (Guernsey)	11	15
20,000	Mining Co. of Ireland	7	13½
6,000	Polgreen	4	1
3,000	Polberon Consols	10	½
2,000	Relistian	—	½
5,000	Redmoor Consolidated	5	1½
10,000	Rhymney Iron	50	16
100	Rosewall Hill	100	170
800	South Towan	10	1
4,000	Tregollan	4½	2
4,000	Treleigh Consols	4½	5
4,565	Tamar Consols	3	2

Shares.	BRITISH MINES.	Paid.	Price
6,000	Tin Croft	6½	3½
4,300	Tretoil	1½	2½ 3
1,000	Trevidgia	5	5
179	Treviskey and Barrier	—	150
96	Tresavean	—	1500
120	Trethellan	—	275
4,000	United Hills	5	7
6,000	Wicklow Copper	5	18
3,845	West Wheal Jewel	9	4½
1,000	Wheal Julia	—	6½ ⅝
128	Wheal Kitty	—	60
	FOREIGN MINES.		
5,000	Alten Mining Company	12½	8
10,000	Anglo Mexican Co.	100	6
2,374	Do. Subscription	25	1
3,000	Bolanos	150	5
	Ditto Scrip	15	4½
10,000	Brazilian Imperial	20	7½ 7
10,000	Bolivar	20	½
10,000	Ditto Scrip	10	2
10,000	Cata Branca } Brazilian	4½	7½
10,000	Conceiçao } Co.	4	—
12,000	Cobre Copper Company	40	35½
8,500	Colombian Co. regis.	55	2
10,000	Copiapo Mining Co.	13½	9
20,000	General Mining Asso.	18	2
5,351	Mexican Company	60	2
12,000	Mocambos and Cocaes	25	4½
14,562	{ Real del Monte, regis.	40½	3½
	{ Do. unregistered	—	3
	Ditto Loan Notes	120	100
7,000	Royal Santiago	10	10
11,000	St. John d'el Rey	14½	7½
30,000	United Mexican	40	1
	Black Scrip, addl. capital	5	2
	Red New Scrip	5	3

RAILWAY SHARE LIST AND TRAFFIC RETURNS.

Line.	Entire Lgth.	Now Open.	Present actual cost.	Pd. on Share.	Val. of Share.	Last week's Returns.
Arbroath and Forfar Railway	15	15	£ 141,645	25	22	£169 11 [illegible]
Birmingham & Derby Junc.	40	38½	856,044	100	48 7½	—
Birmingham and Gloucester	52½	51	1,013,723	100	64½	1362 5 9
Brandling Junction	25	25	437,794	45	—	729 1 [illegible]
Chester and Birkenhead	14½	14½	436,464	50	30	460 8 3
Dublin and Kingstown	6	6	333,300	100	77½	627 15 5
Dundee and Arbroath	16½	16½	134,334	20	25	—
Eastern Counties*	126½	17½	1,476,170	23	9 9½	874 10 0
Glasgow and Ayr	51	40	699,343	40	40	1040 2 10
Glasgow and Paisley Joint	22½	22½	350,000	25	26	743 6 [illegible]
Gd. Junc. & Chester & Crewe	115½	115½	2,192,947	100	191 90	4353 13 3
Great North of England	75	45	1,000,000	90	90½	—
Great Western	118	118	6,286,644	65	87 8½	9833 5 10
Hull and Selby	31	31	450,000	50	50½	821 7 4
Lancaster & Preston Junc.	20½	20½	360,000	47½	27½	440 4 11
Liverpool and Manchester	31	31	1,410,000	100	170	4193 2 1
London and Birmingham	112½	112½	5,724,567	90	183 ½	11986 4 6
London and Blackwall	3½	3½	887,000	25	11½ 11	809 10 3
London and Brighton }	46½	46½	} 2,000,000	50	37⅞ ⅛	1747 13 10
Ditto Shoreham Branch }	5½	5½				96 19 5
London and Croydon	10½	7½	447,000	15	12 11½	337 14 6
London and Greenwich	3¾	3¾	781,205	20	4½	731 11 3
London and South Western	93	77	2,200,507	56½	58½ 9	3427 19 3½
Manchester, Bolton, & Bury	10	10	779,300	95	35	701 3 10½
Manchester & Birmingham	45	5	1,104,813	40	29½ 9	380 12 10
Manchester and Leeds	50	50	2,305,100	70	71 70½	3596 5 6
Midland Counties	57	57	1,440,000	100	84	2064 12 4
Newcastle and Carlisle	60½	60½	750,000	100	90	—
Northern and Eastern†	32½	15½	350,912	30	32½ ¼	612 3 0
North Midland	72¾	72¾	2,900,000	100	73 1½	3113 3 4½
North Union‡	23	23	500,000	75	73½	1155 10 4
Preston and Wyre	19½	19½	270,000	50	50	187 11 9
Sheffield and Manchester	40	7		37½	—	207 16 5
Ulster	25	8	330,245	22½	—	281 10 6
York and North Midland	23	23	446,500	50	98½ 1½	1296 11 6

* Including Northern and Eastern Railway toll. † Rent and toll to Eastern Counties (about 126l. per week) included in the returns. ‡ The Liverpool and Manchester toll is deducted.

THE LONDON GAZETTE—BANKRUPTS.

TUESDAY.—[illegible]

FRIDAY.—[illegible]

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